EMC TEST REPORT

For

HD Receiver Technology Co., Ltd.

DVB-T Receiver

Model No.: DVBT02

Prepared for	:	HD Receiver Technology Co., Ltd.
Address	:	Rm.1508, Ⅱ Grand Tower, 625 Nathan RD., Kowloon, HK
Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	:	Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an District, Shenzhen, Guangdong, China
Date of receipt of test sample	:	September 19 2011
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	September 20, 2011 - September 29, 2011
Date of Report	:	September 29, 2011

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TEST REPORT
EN 55013: 2001+A1: 2003+A2: 2006
Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment
EN 55020: 2007
Electromagnetic immunity of broadcast receivers and associated equipment

Report Reference No. .....:	**LCS1109282494E**
Date of issue.....:	September 29, 2011
Testing Laboratory Name .....:	**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address.....:	Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an District, Shenzhen, Guangdong, China
Testing location/ procedure.....:	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's name.....:	**HD Receiver Technology Co., Ltd.**
Address.....:	Rm.1508, Ⅱ Grand Tower, 625 Nathan RD., Kowloon, HK
Test specification:	
Standard.....:	**EN 55013: 2001+A1: 2003+A2: 2006,** **EN 55020: 2007,** **EN 61000-3-2: 2006+A1: 2009+A2: 2009,** **EN 61000-3-3: 2008**
Test Report Form No. .....:	**LCSEMC-1.0**
TRF Originator.....:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF .....:	Dated 2011-03

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Test item description. .....:	**DVB-T Receiver**
Manufacturer.....:	Shenzhen GAOSHIJIA Technology Co., Ltd.
Model/Type reference .....:	DVBT02
Ratings .....:	AC 100-240V, 50/60Hz
Result .....:	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Bobo Li / File administrators	Vito Cao / Technique principal	Gavin Liang / Manager

EMC -- TEST REPORT

Test Report No. : LCS1109282494E	September 29, 2011 Date of issue

Type / Model.....	: DVBT02
EUT.....	: DVB-T Receiver
Applicant.....	**: HD Receiver Technology Co., Ltd.**
Address.....	: Rm.1508, Ⅱ Grand Tower, 625 Nathan RD., Kowloon, HK
Telephone.....	: /
Fax.....	: /
Contact.....	: /
Manufacturer.....	**: Shenzhen GAOSHIJIA Technology Co., Ltd.**
Address.....	: No.6 Building, Huangtian Industrial Area, Xixiang, Bao'an District, Shenzhen, China
Telephone.....	: /
Fax.....	: /
Contact.....	: /
Factory.....	**:** /
Address.....	: /
Telephone.....	: /
Fax.....	: /
Contact.....	: /

Test Result according to the standards on page 6:	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. SUMMARY OF STANDARDS AND RESULTS

1.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	**Standard**	**Limits**	**Results**
Conducted disturbance at mains terminals	EN 55013: 2001+A1: 2003+A2: 2006	--------	PASS
Conducted disturbance at Antenna terminals	EN 55013: 2001+A1: 2003+A2: 2006	---------	PASS
Radiated disturbance	EN 55013: 2001+A1: 2003+A2: 2006	--------	PASS
Harmonic current emissions	EN 61000-3-2: 2006+A1: 2009+A2: 2009	Class A	PASS
Voltage fluctuations & flicker	EN 61000-3-3: 2008	--------	PASS

IMMUNITY (EN 55020: 2007)			
Description of Test Item	**Basic Standard**	**Performance Criteria**	**Results**
Electrostatic discharge (ESD)	EN 61000-4-2: 2009	B	PASS
Electrical fast transient (EFT)	EN 61000-4-4: 2004+A1: 2010	B	PASS
Immunity against Input interference (S1) test	EN 55020: 2007	A	PASS
immunity Against RFI Voltages/current(S2) test	EN 55020: 2007	A	PASS
Ambient Electromagnetic Fields Immunity (S3) Test	EN 55020: 2007	A	PASS
Screening Effectiveness Test	EN 55020: 2007	A	PASS
keyed Carrier Test	EN 55020: 2007	A	PASS
N/A is an abbreviation for Not Applicable.			

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1.2.Description of Performance Criteria

General Performance Criteria

Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:

— essential operational modes and states;

— tests of all peripheral access (hard disks, floppy disks, printers, keyboard, mouse, etc.);

— quality of software execution;

— quality of data display and transmission;

— quality of speech transmission.

1.2.1.Performance criterion A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacture when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deriver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

1.2.2.Performance criterion B

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacture, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operation state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be deriver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

1.2.3.Performance criterion C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacture’s instructions.

Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be loss.

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2. GENERAL INFORMATION

2.1.Description of Device (EUT)

EUT : DVB-T Receiver

Model Number : DVBT02

Power Supply : AC 100-240V, 50/60Hz

EUT Clock Frequency : ≤ 15MHz

2.2.Test Facility

Site Description

EMC Lab. : Accredited by CNAS, June 04, 2010
The Certificate Registration Number. is L4595.
Accredited by FCC, July 14, 2011
The Certificate Registration Number. is 899208.
Accredited by Industry Canada, May. 02, 2011
The Certificate Registration Number. is 9642A-1

2.3.Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

2.4.Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Radiation Uncertainty	:	30MHz~200MHz	±2.96dB	(1)
		200MHz~1000MHz	±3.10dB	(1)
Conduction Uncertainty	:	150kHz~30MHz	±1.63dB	(1)
Power disturbance	:	30MHz~300MHz	±1.60dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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3. MEASURING DEVICE AND TEST EQUIPMENT

3.1.Conducted Disturbance

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2011/06
2	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	1164.6407.03	2011/06
3	Artificial Mains	ROHDE & SCHWARZ	ENV216	3560.6550.12	2011/06
4	EMI Test Software	AUDIX	E3	N/A	2011/06

3.2.Disturbance Power

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2011/06
2	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	1164.6407.03	2011/06
3	Absorbing clamp	ROHDE & SCHWARZ	MDS 21	4033	2011/06
4	EMI Test Software	AUDIX	E3	N/A	2011/06

3.3.Radiated Electromagnetic Disturbance

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2011/06
2	Triple-loop Antenna	EVERFINE	LLA-2	11050003	2011/06
3	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	1164.6407.03	2011/06
4	EMI Test Software	AUDIX	E3	N/A	2011/06

3.4.Radiated Disturbance (Electric Field)

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2011/06
2	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	1164.6407.03	2011/06
3	Log per Antenna	ROHDE & SCHWARZ	VULB9163	9163-470	2011/06
4	Amplifier	SCHWARZBECK	PAP-0001	21002	2011/06
5	EMI Test Software	AUDIX	E3	N/A	2011/06

3.5.Harmonic Current

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2011/06

3.6.Voltage fluctuation and Flicker

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2011/06

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3.7.Electrostatic Discharge

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	KIKUSUI	KC001311	KES4021	2011/06

3.8.RF Field Strength Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	SIGNAL GENERATOR	HP	8648A	625U00573	2011/06
2	Amplifier	AR	500A100	17034	2011/06
3	Amplifier	AR	100W/1000M1	17028	2011/06
4	Isotropic Field Monitor	AR	FM2000	16829	2011/06
5	Isotropic Field Probe	AR	FP2000	16755	2011/06
6	Bi-conic Antenna	EMCO	3108	9507-2534	2011/06
7	By-log-periodic Antenna	AR	AT1080	16812	2011/06
8	EMS Test Software	ROHDE & SCHWARZ	ESK1	N/A	2011/06

3.9.Electrical Fast Transient/Burst

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Electrical fast transient(EFT)generator	3CTEST	EFT-4021	EC0461044	2011/06
2	Coupling Clamp	3CTEST	EFTC	EC0441098	2011/06

3.10.Surge

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Surge test system	3CTEST	EC0171014	VDG-1105G	2011/06
2	Coupling/decoupling network	3CTEST	ECS5591033	SGN-5010G	2011/06

3.11.Conducted Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Simulator	EMTEST	CWS500C	0900-12	2011/06
2	CDN	EMTEST	CDN-M2	5100100100	2011/06
3	CDN	EMTEST	CDN-M3	0900-11	2011/06
4	Injection Clamp	EMTEST	F-2031-23MM	368	2011/06
5	Attenuator	EMTEST	ATT6	0010222A	2011/06

3.12.Power Frequency Magnetic Field Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power frequency mag-field generator System	EVERFINE	EMS61000-8K	906003	2011/06

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3.13.Voltage Dips

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2011/06

3.14.Voltage Short Interruptions

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2011/06

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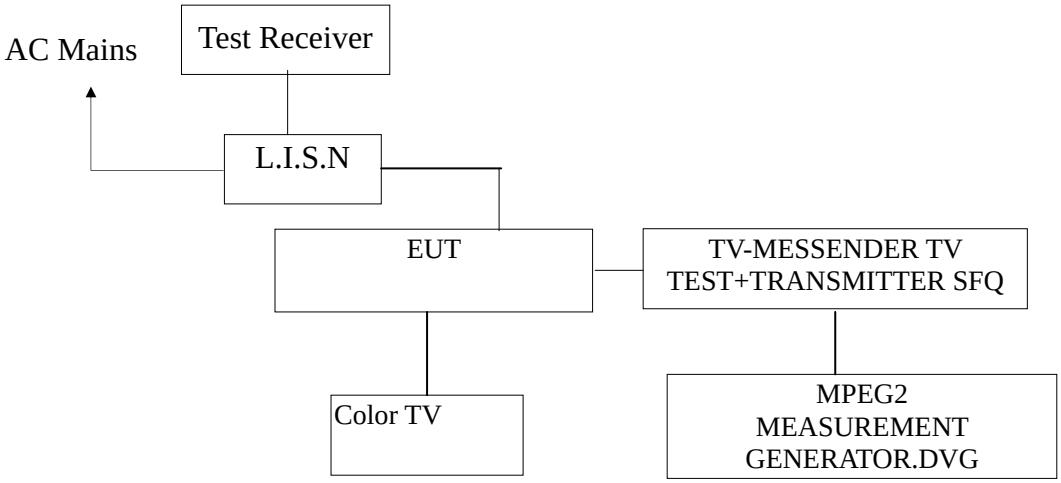
4. POWER LINE CONDUCTED EMISSION TEST

4.1 Block Diagram of Test Setup



(EUT: DVB-T Receiver)

4.2 Test Standard

EN 55013: 2001+A1: 2003+A2: 2006

4.3 Power Line Conducted Emission Limit

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
The lower limit shall apply at the transition frequencies.

4.4 EUT Configuration on Test

The following equipments are installed on conducted emission test to meet EN55013 requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

4.5 Operating Condition of EUT

4.5.1 Setup the EUT and simulators as shown in Section 4.1.

4.5.2 Turn on the power of all equipments.

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4.5.3 Let the EUT work in test modes (Normal) and test it.

4.6 Test Procedure

The EUT is put on the ground and connected to the AC mains through a Artificial Mains Network (AMN). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the EN 55013 regulations during conducted emission test.

The bandwidth of the test receiver is set at 9kHz.

The frequency range from 150 kHz to 30 MHz is investigated.
The test data are listed in Section 4.7 and the scanning waveform is in the next page.

4.7 Power Line Conducted Emission Test Results

PASS.

The frequency range 150kHz to 30MHz is investigated.

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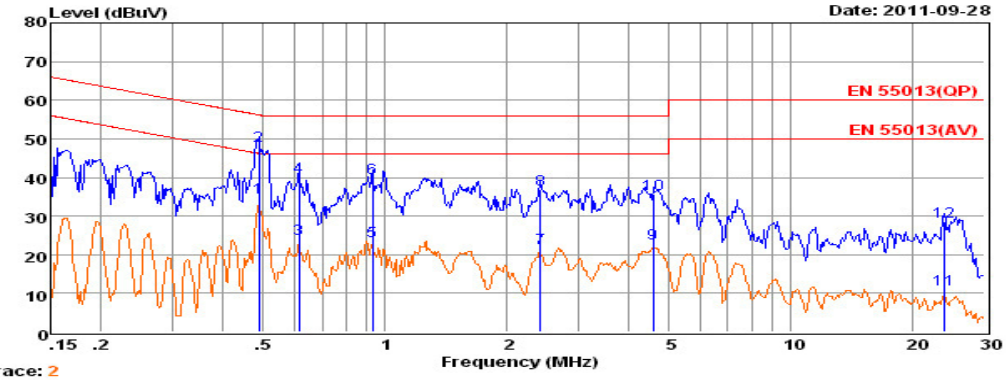
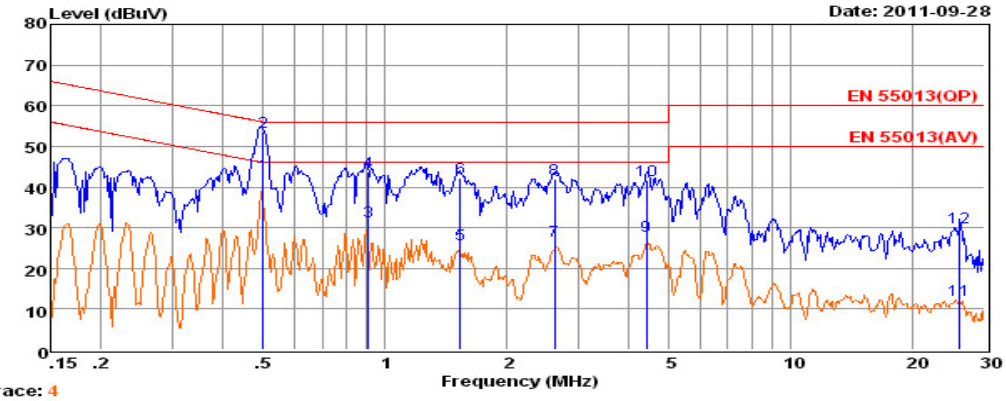


Trace: 2

Env. Ins:	24*/56%
EUT:	DVB-T Receiver
M/N:	DVBT02
Power Rating:	AC 230V/50Hz
Test Mode:	On
Operator:	Willis
Memo:	
Pol:	NEUTRAL

	Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.49	25.15	9.62	0.04	34.81	46.19	-11.38	Average
2	0.49	38.42	9.62	0.04	48.08	56.19	-8.11	QP
3	0.61	14.41	9.63	0.04	24.08	46.00	-21.92	Average
4	0.61	30.34	9.63	0.04	40.01	56.00	-15.99	QP
5	0.93	13.68	9.63	0.05	23.36	46.00	-22.64	Average
6	0.93	30.16	9.63	0.05	39.84	56.00	-16.16	QP
7	2.42	12.01	9.64	0.05	21.70	46.00	-24.30	Average
8	2.42	27.16	9.64	0.05	36.85	56.00	-19.15	QP
9	4.57	13.19	9.66	0.06	22.91	46.00	-23.09	Average
10	4.57	25.88	9.66	0.06	35.60	56.00	-20.40	QP
11	23.89	1.04	9.82	0.13	10.99	50.00	-39.01	Average
12	23.89	18.60	9.82	0.13	28.55	60.00	-31.45	QP

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss



Trace: 4

Env. Ins:	24*/56%
EUT:	DVB-T Receiver
M/N:	DVBT02
Power Rating:	AC 230V/50Hz
Test Mode:	On
Operator:	Willis
Memo:	
Pol:	LINE

	Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.50	33.60	9.62	0.04	43.26	46.00	-2.74	Average
2	0.50	44.00	9.62	0.04	53.66	56.00	-2.34	QP
3	0.91	21.72	9.63	0.05	31.40	46.00	-14.60	Average
4	0.91	34.07	9.63	0.05	43.75	56.00	-12.25	QP
5	1.54	16.20	9.64	0.05	25.89	46.00	-20.11	Average
6	1.54	32.42	9.64	0.05	42.11	56.00	-13.89	QP
7	2.62	17.05	9.64	0.05	26.74	46.00	-19.26	Average
8	2.62	32.11	9.64	0.05	41.80	56.00	-14.20	QP
9	4.41	18.39	9.65	0.06	28.10	46.00	-17.90	Average
10	4.41	31.94	9.65	0.06	41.65	56.00	-14.35	QP
11	26.14	2.36	9.71	0.13	12.20	50.00	-37.80	Average
12	26.14	20.14	9.71	0.13	29.98	60.00	-30.02	QP

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

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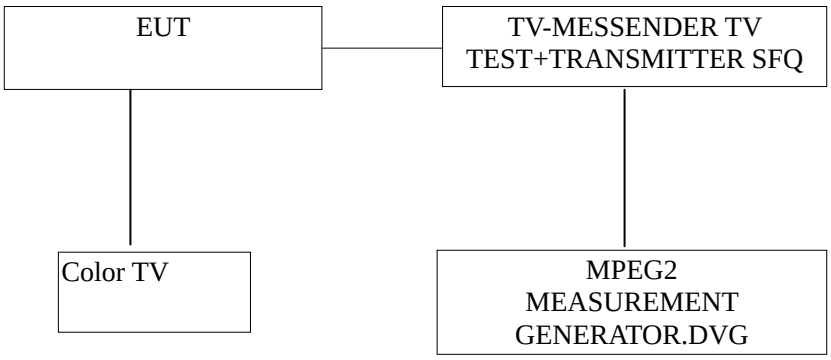
5. ANTENNA POWER CONDUCTED LIMIT FOR RECEIVERS

5.1 Block Diagram of Test Setup

The following test equipments are used during the power line conducted measurement:



(EUT: DVB-T Receiver)

5.2 Antenna Power Conducted Measurement Limits

The limit values specified correspond to a nominal impedance of 75Ω ,The limit values for receivers with nominal impedance other than 75Ω are calculated according to the following formula:

$L_Z=L_{75}+10LOG\ (Z/75)\ dB(uV)$

Equipment type	Source	Frequency	Limit values dB (uV) 75Ω Quasi-peak[a]
Television receivers, video recorders and PC tuner cards working in channels between 30MHz and 1GHz	Local Oscillator	≦1000 30 to 950 950 to 2150 30 to 2150	Fundamental 46 Harmonics 46 Harmonics 54 46
a At frequencies above 1GHz the peak detector is used.			

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5.3 Configuration of EUT on Measurement

1) EUT and support equipment were set up on the wooden table as per step 9 of the preliminary test.
2) The receiver scanned from 30MHz to 1000MHz, recorded the value, the local frequency, amplitude were recorded in which correction factors were used to calculate the emission level and compare reading to the applicable limit, The power at the antenna terminal at any frequency within the range of measurement shall not exceed 2.0GHz.

5.4 Test Procedure

1) The test item can be in deliver on shielding room.
2) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4(see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
3) EUT receives AC power source from the outlet socket. All support equipment, if need, receives 230VAC/50Hz power from another socket.
4) With the 75~50Ω matching network when the connected coaxial cable of impedance not matching.
5) The output level of the auxiliary signal generator shall be set to give the value of 70dB(μV) for TV to the input of the frequency-modulation of television receiver respectively, on a 75Ω impedance, An additional amplifier should be insert at the generator output, if necessary.
6) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
7) The results shall be expressed in the terms of the substitution power in nanowatt (nW), as supplied by the standard signal generator. The specified source impedance of the receiver shall be stated with the results.
8) When measurements are made at the antenna terminals of the equipment under test, an auxiliary signal generator shall be used to feed the equipment under test input with a standard test signal at the receiver tuning frequency(30MHz to 1000MHz).

5.5 Antenna Power Conducted Measurement Results

The frequency range from 150KHz to 30 MHz is investigated.

PASS.

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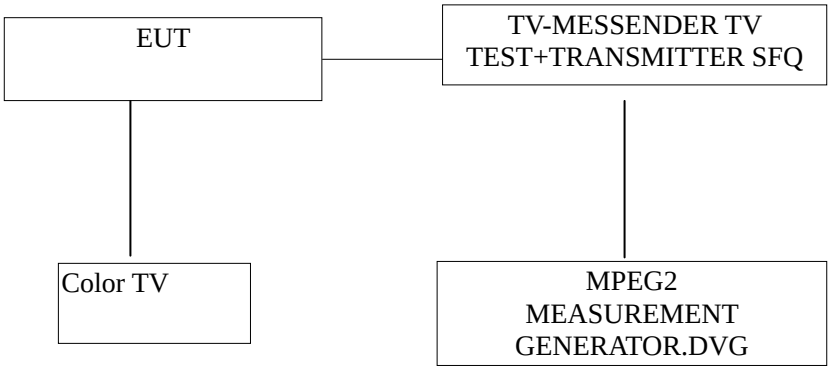
6. RADIATED EMISSION MEASUREMENT

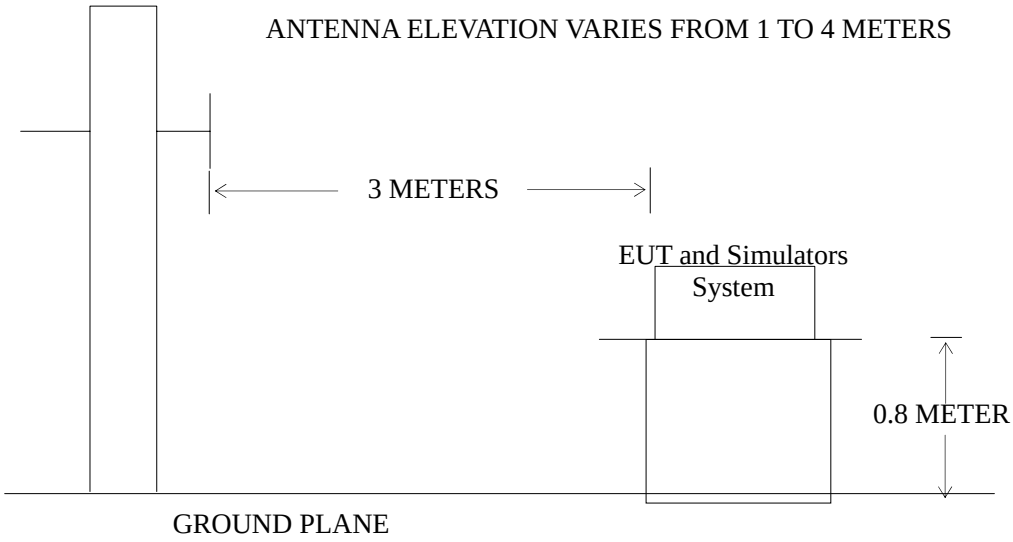
6.1 Block Diagram of Test

6.1.1 Block diagram of connection between the EUT and simulators



(EUT: DVB-T Receiver)

6.1.2 Block diagram of test setup in chamber



(EUT: DVB-T Receiver)

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6.2 Radiated Emission Limit

For EN 55013

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		dB(μV)/m	
	3	Fundamental	57
30 ~ 300	3	Harmonics	52
300 ~ 1000	3	Harmonics	56
Other	3	Harmonics	Same as EN 55022B

Remark: (1) Emission level (dB)μV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

6.3 EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4 Operating Condition of EUT

6.4.1. Setup the EUT as shown in Section 6.1.

6.4.2. Let the EUT work in test mode (ON) and measure it.

6.5 Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009 on radiated emission measurement. The bandwidth of the EMI test receiver is set at 120kHz.
The frequency range from 30MHz to 1000MHz is checked.

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6.6 Radiated Emission Noise Measurement Result

PASS.

The frequency range from 30MHz to 1000MHz is investigated.

The scanning waveforms is in the next page.

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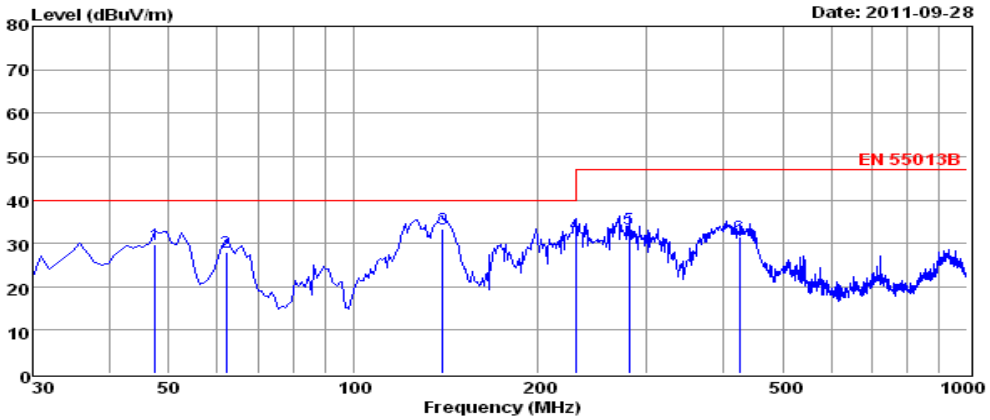
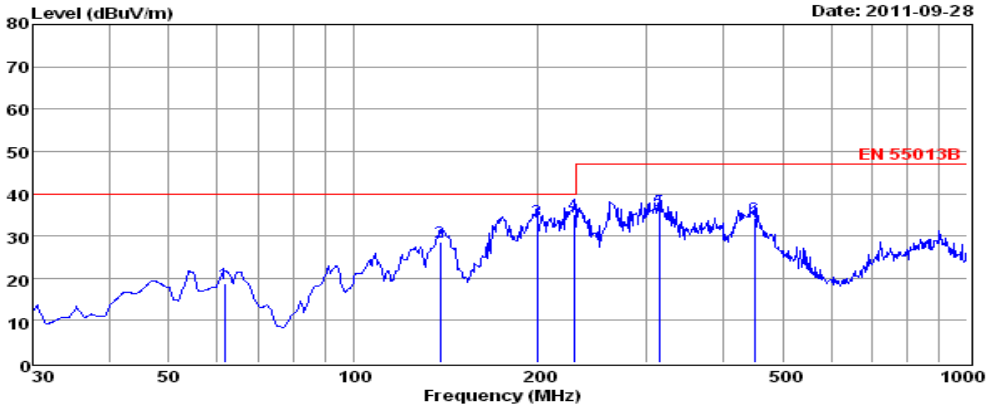


Env. /Ins: 24℃/56%
EUT: DVB-T Receiver
M/N: DVBT02
Power Rating: AC 230V/50Hz
Test Mode: On
Operator: Willis
Memo:
pol: VERTICAL

	Freq.	Reading	CabLos	AntFac	PreFac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	47.46	55.18	0.35	13.40	39.14	29.79	40.00	-10.21	QP
2	62.01	54.75	0.48	11.89	39.16	27.96	40.00	-12.04	QP
3	139.61	63.64	0.75	8.22	39.20	33.41	40.00	-6.59	QP
4	229.82	58.83	0.93	11.64	39.19	32.21	40.00	-7.79	QP
5	281.23	58.68	1.06	12.69	39.16	33.27	47.00	-13.73	QP
6	425.76	53.98	1.16	15.50	39.09	31.55	47.00	-15.45	QP

Note: 1. All readings are Quasi-peak values.
2. Measured = Reading + Antenna Factor + Cable Loss - Amp Factor.
3. The emission levels that ate 20dB below the official limit are not reported.



Env. /Ins: 24℃/56%
EUT: DVB-T Receiver
M/N: DVBT02
Power Rating: AC 230V/50Hz
Test Mode: On
Operator: Willis
Memo:
pol: HORIZONTAL

	Freq.	Reading	CabLos	AntFac	PreFac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	61.56	45.43	0.48	12.07	39.16	18.82	40.00	-21.18	QP
2	138.39	58.80	0.70	8.31	39.20	28.61	40.00	-11.39	QP
3	199.29	61.46	0.84	10.57	39.20	33.67	40.00	-6.33	QP
4	228.49	61.72	0.93	11.58	39.19	35.04	40.00	-4.96	QP
5	314.38	60.93	1.09	13.25	39.14	36.13	47.00	-10.87	QP
6	449.56	56.32	1.27	15.57	39.08	34.08	47.00	-12.92	QP

Note: 1. All readings are Quasi-peak values.
2. Measured = Reading + Antenna Factor + Cable Loss - Amp Factor.
3. The emission levels that ate 20dB below the official limit are not reported.

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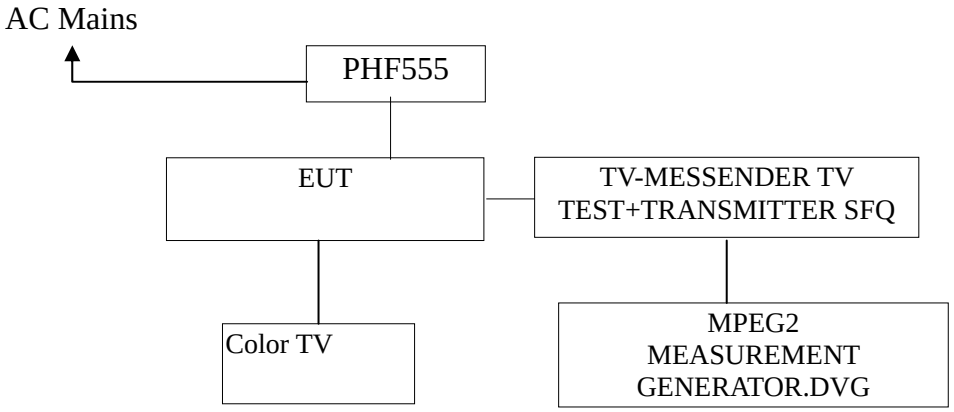
7. HARMONIC CURRENT EMISSION TEST

7.1 Block Diagram of Test Setup



(EUT: DVB-T Receiver)

7.2 Test Standard

EN 61000-3-2: 2006+A1: 2009+A2: 2009 Class A

7.3 Operating Condition of EUT

Same as Section 4.5 except the test setup replaced by Section 7.1.

7.4 Test Results

PASS.

Please refer to the following pages.

Because power of EUT less than 75W. According standard EN 61000-3-2, Harmonic current isn't required.

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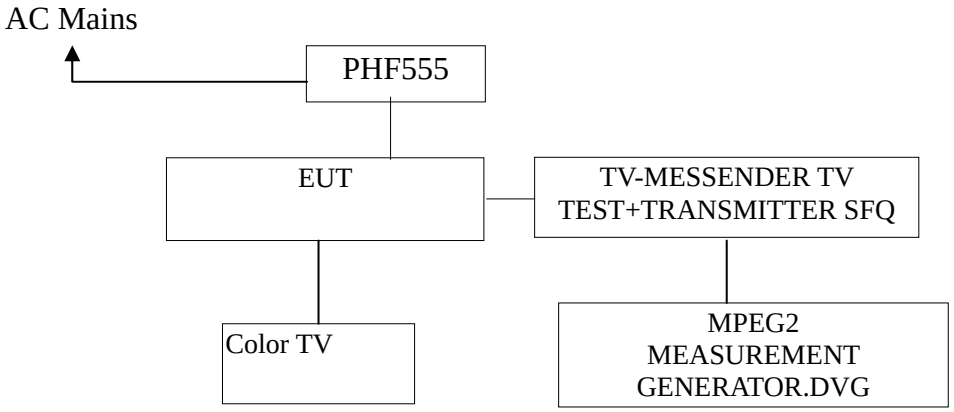
8. VOLTAGE FLUCTUATIONS & FLICKER TEST

8.1 Block Diagram of Test Setup



(EUT: DVB-T Receiver)

8.2 Test Standard

EN 61000-3-3: 2008

8.3 Operating Condition of EUT

8.3.1 Setup the EUT and simulators as shown in Section 8.1.
8.3.2 Turn on the power of all equipments.
8.3.3 Let the EUT work in test modes (On/Off) and test it.

8.4 Test Results

PASS.

Please refer to the following pages.

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EN 61000-3-3 TEST REPORT: September 28, 2011

Unit: DVB-T Receiver M/N:DVBT02

Test mode: On/Off

Manuf: HD Receiver Technology Co., Ltd.

Operator: Willis

==========

TEST SETUP

Test Freq.: 50.00 Hz. Test Voltage: 230.0 vac
Waveform : SINE
Test Time: 10.0 min. Tshort: 10.0 min.

Prog. Zo Enabled: YES Prog. Zo: 0.000

Voltage Change less than once per Hour: NO
Impedance selected: IEC-725 STD. REF.

Synthetic R+L Enabled: NO
Resistance: 0.380 Ohms Inductance: 460.000 uH

TEST DATA

Result: PASS

	EUT Data	Limit	Result	Test Enabled
Pst max	0.016	1.00	PASS	true
Plt max	0.016	0.65	PASS	true
dc %	0.00	3.00	PASS	true
dmax %	0.00	4.00	PASS	true
d(t) sec.	0.00	0.20	PASS	true
Power Source Data				
Source Pst max	0.025	0.400	PASS	true
% THD	0.03	3.00	PASS	true

END OF REPORT

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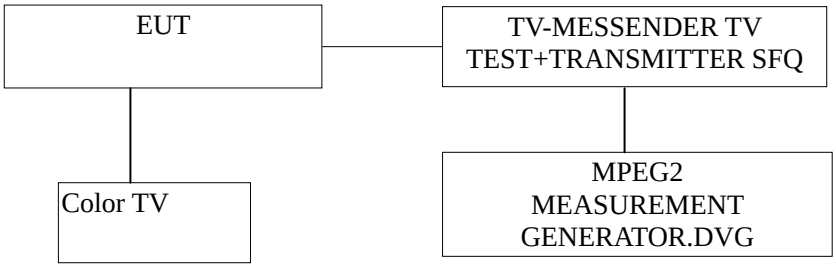
9. ELECTROSTATIC DISCHARGE IMMUNITY TEST

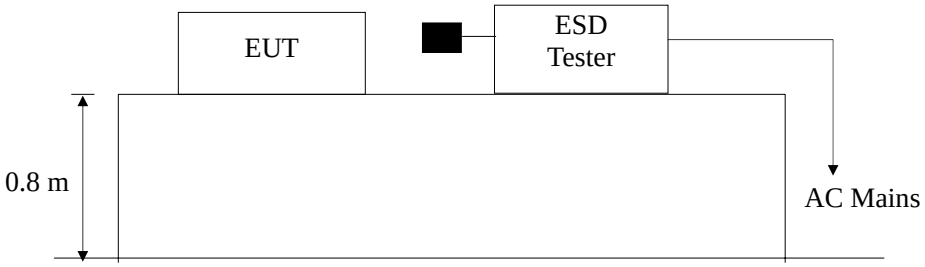
9.1 Block Diagram of Test Setup

9.1.1.Block Diagram of the EUT and the simulators



(EUT: DVB-T Receiver)

9.1.2. Test Setup



(EUT: DVB-T Receiver)

9.2 Test Standard

EN 55020: 2007 (EN61000-4-2: 2009 Severity Level: 3 / Air Discharge: ±8KV Level: 2 / Contact Discharge: ±4KV)

9.3 Severity Levels and Performance Criterion

9.3.1Severity level

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	±2	±2
2.	±4	±4
3.	±6	±8
4.	±8	±15
X	Special	Special

9.3.2Performance criterion: **B**

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9.4 EUT Configuration on Test

The configuration of EUT are listed in Section 4.4.

9.5 Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section4.5 except the test set up replaced by Section 9.1.

9.6 Test Procedure

9.6.1 Air Discharge

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

9.6.2 Contact Discharge

All the procedure shall be same as Section 9.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

9.6.3 Indirect Discharge For Horizontal Coupling Plane

At least 10 single discharges(in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit(if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

9.6.4 Indirect Discharge For Vertical Coupling Plane

At least 10 single discharge (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

9.7 Test Results

PASS.

Please refer to the following pages.

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Electrostatic Discharger Test Results

Standard	☐ IEC 61000-4-2 ☑ EN 61000-4-2		
Applicant	HD Receiver Technology Co., Ltd.		
EUT	DVB-T Receiver	**Temperature**	24℃
M/N	DVBT02	**Humidity**	53％
Criterion	B	**Pressure**	1021mbar
Test Mode	Normal	**Test Date**	September 28, 2011
Test Engineer	Bluesky		

Air Discharge

Test Points	Test Levels			Results		
	± 2KV	± 4KV	± 8KV	Passed	Fail	Performance Criterion
Front	☒	☒	☒	☒	☐	☐A ☒B
Back	☒	☒	☒	☒	☐	☐A ☒B
Left	☒	☒	☒	☒	☐	☐A ☒B
Right	☒	☒	☒	☒	☐	☐A ☒B
Top	☒	☒	☒	☒	☐	☐A ☒B
Bottom	☒	☒	☒	☒	☐	☐A ☒B

Contact Discharge

Test Points	Test Levels		Results		
	± 2 KV	±4 KV	Passed	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐A ☒B
Back	☒	☒	☒	☐	☐A ☒B
Left	☒	☒	☒	☐	☐A ☒B
Right	☒	☒	☒	☐	☐A ☒B
Top	☒	☒	☒	☐	☐A ☒B
Bottom	☒	☒	☒	☐	☐A ☒B

Discharge To Horizontal Coupling Plane

Side of EUT	Test Levels		Results		
	± 2 KV	± 4 KV	Passed	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐A ☒B
Back	☒	☒	☒	☐	☐A ☒B
Left	☒	☒	☒	☐	☐A ☒B
Right	☒	☒	☒	☐	☐A ☒B

Discharge To Vertical Coupling Plane

Side of EUT	Test Levels		Results		
	± 2 KV	± 4 KV	Passed	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐A ☒B
Back	☒	☒	☒	☐	☐A ☒B
Left	☒	☒	☒	☐	☐A ☒B
Right	☒	☒	☒	☐	☐A ☒B

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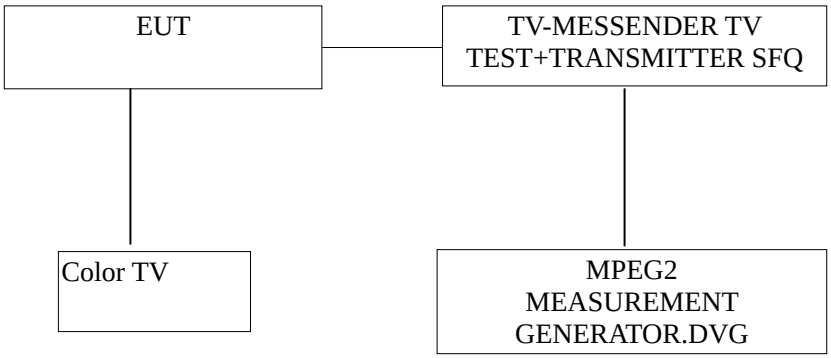
10. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

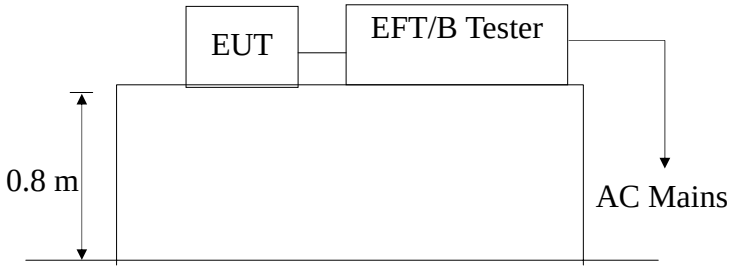
10.1Block Diagram of Test Setup

10.1.1 Block Diagram of the EUT



(EUT: DVB-T Receiver)

10.1.2 Block Diagram of the AC Mains



(EUT: DVB-T Receiver)

10.2 Test Standard

EN 55020: 2007 (EN 61000-4-4: 2006, Severity Level, Level 2: 1KV & 0.5KV)

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10.3 Severity Levels and Performance Criterion

10.3.1Severity level

Open Circuit Output Test Voltage ± 10%		
Level	Normal Power Supply Lines	Normal I/O (Input/Output) Signal data and control lines
1.	0.50KV	0.25KV
2.	1.00KV	0.50KV
3.	2.00KV	1.00KV
4.	4.00KV	2.00KV
X	Special	Special

10.3.2 Performance criterion: **B**

10.4 EUT Configuration on Test

The configuration of EUT are listed in Section 4.4.

10.5 Operating Condition of EUT

10.5.1 Setup the EUT as shown in Section 10.1.

10.5.2 Turn on the power of all equipments.

10.5.3 Let the EUT work in test mode (Normal) and measure it.

10.6 Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

10.6.1 For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

10.6.2 For signal lines ports:

It’s unnecessary to test.

10.6.3 For DC ports:

It’s unnecessary to test.

10.7 Test Result

PASS.

Please refer to the following page.

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Electrical Fast Transient/Burst Test Results

Standard	☐ IEC 61000-4-4 ☑ EN 61000-4-4		
Applicant	HD Receiver Technology Co., Ltd.		
EUT	DVB-T Receiver	**Temperature**	24℃
M/N	DVBT02	**Humidity**	53％
Test Mode	Normal	**Criterion**	B
Test Engineer	Bluesky	**Test Date**	September 28, 2011

Line	Test Voltage	Result (+)	Result (-)
L	1KV	PASS	PASS
N	1KV	PASS	PASS
PE			
L-N	1KV	PASS	PASS
L-PE			
N-PE			
L-N-PE			
Signal Line			
I/O Cable			

Note:

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11. IMMUNITY AGAINST INPUT INTERFERENCE (S1) TEST

11.1 General conditions during testing

Television receivers, video tape equipment with built-in television broadcast receiving facility in the RF recording mode and other associated video equipment with tuner shall be tested at a tuned television channel N and subjected to an unwanted signal in channel M, level n_f, and of the following types, Unwanted signal types: A, B, C, D, E. The immunity against unwanted signals present at the antenna input terminal. Propagation by line (antenna/ tuner input)

11.2 Test Standard

EN 55020: 2007

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11.3 Limits

11.3.1 Limits of immunity of television receivers for systems B, G and I (S1)

Wanted Channel N	Unwanted signal in channel M						
	Level dB(μV)						Type
	M=N-5	N-1	N+1	N+5[a]	N+9[a]	N+11	
N_I and N_{II} and N_H	-	73	73	-	68[b]	-	A
	-	61	61	-	56[b]	-	B
	70	73-x	73-x	70	68-x[b]	68	C or C1
	63	73-y	73-y	63	68-y[b]	61	C2
	70	-	-	70	-	68	D
N_{IV}	-	77	77	-	68	-	A
	-	65	65	-	56	-	B
	74	77-x	77-x	80-x	68-x[b]	-	C or C1
	67	77-y	77-y	80-y	68-y[b]	-	C2
	74	-	-	70	-	-	D
N_V	80	77	77	80	-	-	A
	68	65	65	68	-	-	B
	80-x	77-x	77-x	80-x	62	-	C or C1
	80-y	77-y	77-y	80-y	65	-	C2
	-	-	-	-	62	-	D
For systems B and G x=13dB, y=20dB For system I(monophonic only) x=10dB							
NOTE 1 "X" is the relative level (dB) of the first sound carrier (mono sound channel) with respect to the picture carrier. "y" is the relative level (dB) of the second sound carrier (stereo sound channel) with respect to the picture carrier NOTE 2 (For China only). For systems D-PAL and K-PAL, Table applies with the addition of channels (M) N –4 and N+4, with the same limits of channels N-5 and N+5 and X=10dB. NOTE 3 N±m indicates the frequency of the picture carrier of the tuned television channel, plus or minus m times the channel frequency bandwidth. The test signal shall be applied at this frequency if a limit value is tabulated.							
[a] These levels only apply for television systems with a channel spacing of 8MHz and an IF of 38.9MHz. For other channel spacing and IF frequencies different image channel or local oscillator. [b] Only for hyperband N_H.							

11.3.2 Limits of input immunity of television receivers for system B, G and I

Wanted channel N	Unwanted signal		
	Frequency MHz	Level dB(μV) nf, (75Ω)	Type
N_I	26 to 30	89	E
N_{III}	26 to 30	104	E
NOTE The limits for the wanted channel N_I apply also to the wanted channel N_{III} when band II is used for systems D-SECAM, K-SECAM.			

11.4 Test Result

PASS.

Please refer to the following page.

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Test: Input Immunity S1 <Eagle DVB-T Receiver >

Test Mode:	**DVB-T - Sound**	**Monitor:**	**Audio Out**
Channel:	**9 (205.50 MHz)**	**S/N:**	**63.2 dB**
Country:	**Germany (IF 36.00 MHz)**	**AF Level:**	**392 mV**

Interf. Signal: Type A, 190611-00001-001

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-1	83.0	73.0	10.0	69.2
1	83.0	73.0	10.0	69.1

Interf. Signal: Type B, 190611-00001-002

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-1	71.0	61.0	10.0	67.8
1	71.0	61.0	10.0	68.7

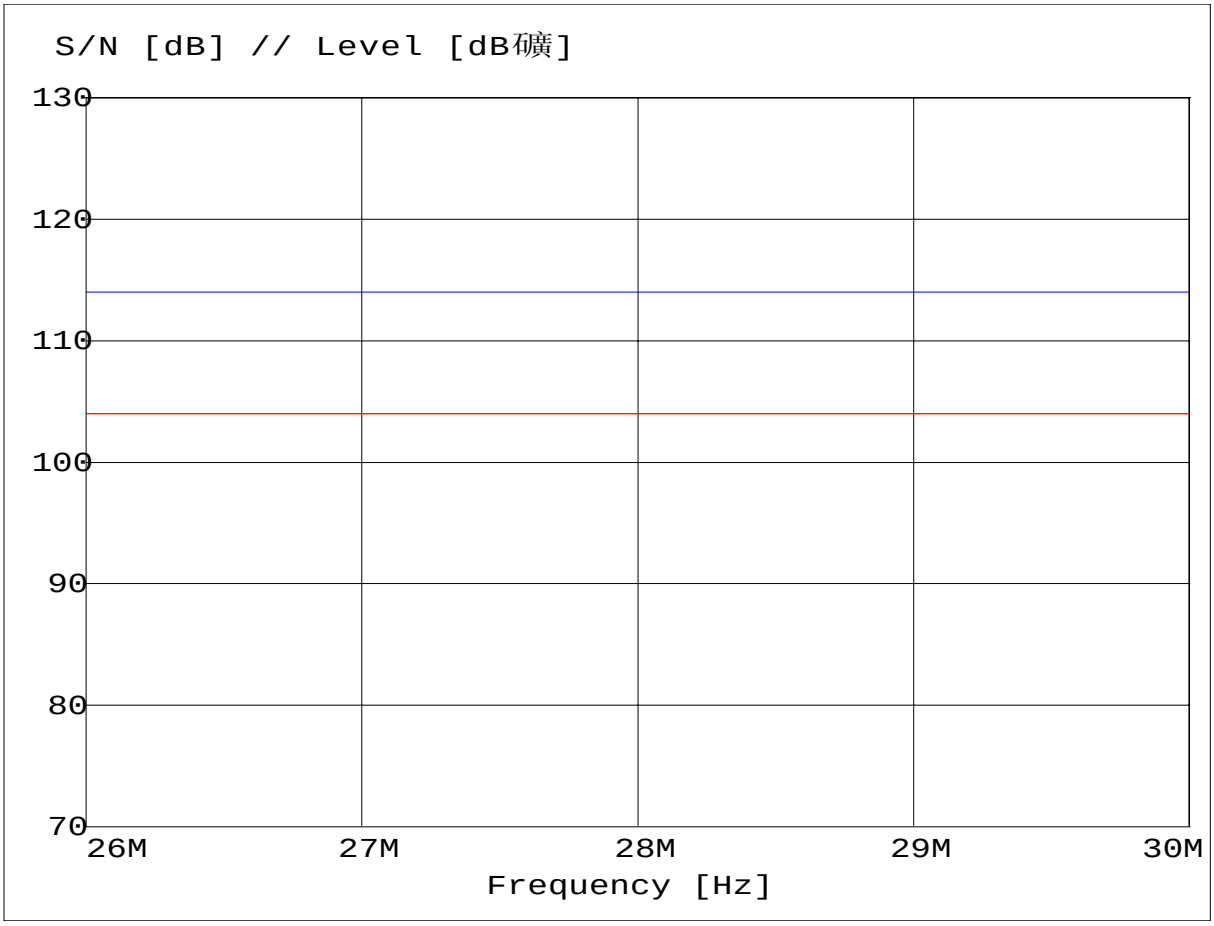
Interf. Signal: Type C, 190611-00001-003

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-5	80.0	70.0	10.0	69.3
-1	70.0	60.0	10.0	67.7
1	70.0	60.0	10.0	69.0
5	80.0	70.0	10.0	69.9
11	78.0	68.0	10.0	68.4

Interf. Signal: Type D, 190611-00001-004

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-5	80.0	70.0	10.0	70.4
5	80.0	70.0	10.0	69.7
11	78.0	68.0	10.0	68.2

Interf. Signal: Type E, 190611-00001-005, 9/28/2011, 10:11:06AM



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Test: Input Immunity S1 <Eagle DVB-T Receiver >

Test Mode: DVB-T - Picture
Channel: 9 (205.50 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: Type A, 190611-00001-006

Channel N	Level dBµV	Limit dBµV	Margin dB
-1	83.0	73.0	10.0
1	83.0	73.0	10.0

Interf. Signal: Type B, 190611-00001-007

Channel N	Level dBµV	Limit dBµV	Margin dB
-1	71.0	61.0	10.0
1	71.0	61.0	10.0

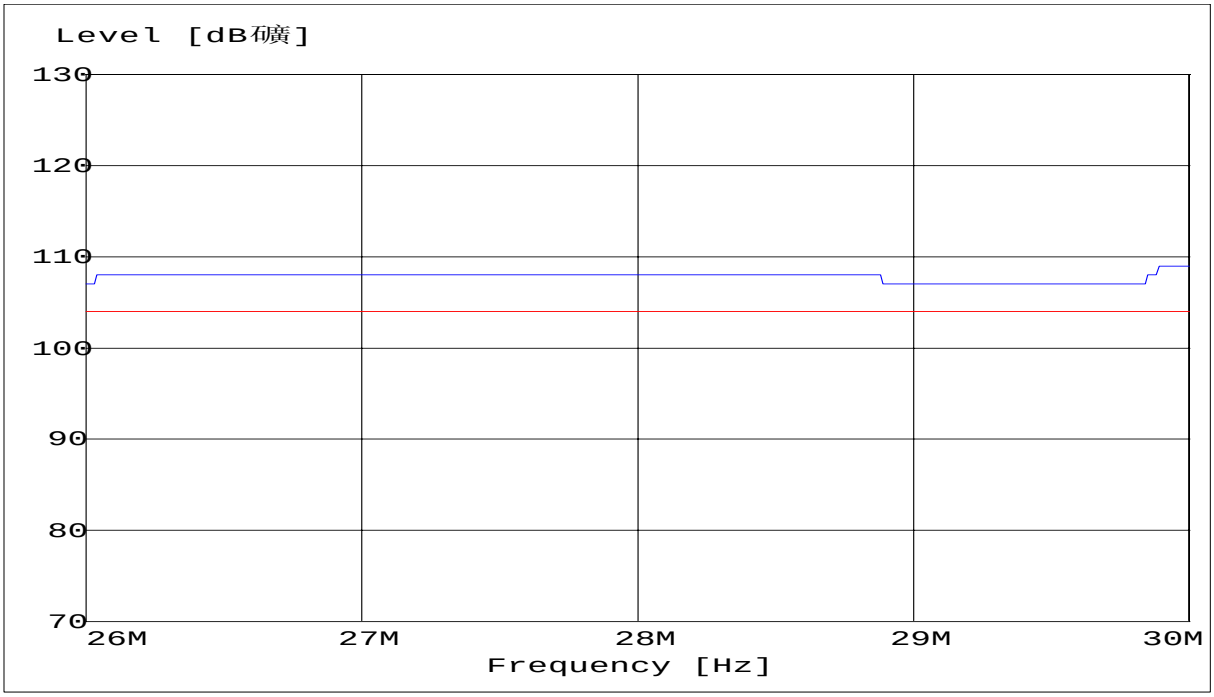
Interf. Signal: Type C, 190611-00001-008

Channel N	Level dBµV	Limit dBµV	Margin dB
-5	80.0	70.0	10.0
-1	70.0	60.0	10.0
1	70.0	60.0	10.0
5	80.0	70.0	10.0
11	78.0	68.0	10.0

Interf. Signal: Type D, 190611-00001-009

Channel N	Level dBµV	Limit dBµV	Margin dB
-5	80.0	70.0	10.0
5	80.0	70.0	10.0
11	78.0	68.0	10.0

Interf. Signal: Type E, 190611-00001-010, 9/28/2011, 10:26:55AM



Measurement Result, 190611-00001-010-1

Frequency MHz	Level dBµV	Limit dBµV	Margin dB	Status
26.000000	107.0	104.0	3.0	
26.020000	107.0	104.0	3.0	
28.970000	107.0	104.0	3.0	
29.010000	107.0	104.0	3.0	
29.050000	107.0	104.0	3.0	
29.280000	107.0	104.0	3.0	
29.340000	107.0	104.0	3.0	
29.460000	107.0	104.0	3.0	
29.640000	107.0	104.0	3.0	
29.750000	107.0	104.0	3.0	
29.810000	107.0	104.0	3.0	
29.840000	107.0	104.0	3.0	

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Test: Input Immunity S1 <Eagle DVB-T Receiver >

Test Mode: DVB-T - Sound Monitor: Audio Out
Channel: 25 (506.00 MHz) S/N: 62.8 dB
Country: Germany (IF 36.00 MHz) AF Level: 391 mV

Interf. Signal: Type A, 190611-00001-011

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-1	87.0	77.0	10.0	69.7
1	87.0	77.0	10.0	70.2
5	90.0	80.0	10.0	68.7
9	78.0	68.0	10.0	69.0

Interf. Signal: Type B, 190611-00001-012

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-1	75.0	65.0	10.0	69.7
1	75.0	65.0	10.0	66.9
5	78.0	68.0	10.0	68.2
9	66.0	56.0	10.0	69.2

Interf. Signal: Type C, 190611-00001-013

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-5	84.0	74.0	10.0	68.6
-1	74.0	64.0	10.0	67.4
1	74.0	64.0	10.0	68.3
5	77.0	67.0	10.0	69.8
9	65.0	55.0	10.0	69.3

Interf. Signal: Type D, 190611-00001-014

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-5	84.0	74.0	10.0	67.6

Test: Input Immunity S1 <Eagle DVB-T Receiver >

Test Mode: DVB-T - Picture
Channel: 25 (506.00 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: Type A, 190611-00001-015

Channel N	Level dBµV	Limit dBµV	Margin dB
-1	87.0	77.0	10.0
1	87.0	77.0	10.0
5	90.0	80.0	10.0
9	78.0	68.0	10.0

Interf. Signal: Type B, 190611-00001-016

Channel N	Level dBµV	Limit dBµV	Margin dB
-1	75.0	65.0	10.0
1	75.0	65.0	10.0
5	78.0	68.0	10.0
9	66.0	56.0	10.0

Interf. Signal: Type C, 190611-00001-017

Channel N	Level dBµV	Limit dBµV	Margin dB
-5	84.0	74.0	10.0
-1	74.0	64.0	10.0
1	74.0	64.0	10.0
5	77.0	67.0	10.0
9	65.0	55.0	10.0

Interf. Signal: Type D, 190611-00001-018

Channel N	Level dBµV	Limit dBµV	Margin dB
-5	84.0	74.0	10.0

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Test: Input Immunity S1 <Eagle DVB-T Receiver >

Test Mode: DVB-T - Sound
Channel: 55 (746.00 MHz)
Country: Germany (IF 36.00 MHz)

Monitor: Audio Out
S/N: 62.7 dB
AF Level: 390 mV

Interf. Signal: Type A, 190611-00001-019

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-5	90.0	80.0	10.0	68.9
-1	87.0	77.0	10.0	68.1
1	87.0	77.0	10.0	70.0
5	90.0	80.0	10.0	69.8

Interf. Signal: Type B, 190611-00001-020

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-5	78.0	68.0	10.0	68.8
-1	75.0	65.0	10.0	68.1
1	75.0	65.0	10.0	69.8
5	78.0	68.0	10.0	67.8

Interf. Signal: Type C, 190611-00001-021

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
-5	77.0	67.0	10.0	70.2
-1	74.0	64.0	10.0	68.3
1	74.0	64.0	10.0	67.4
5	77.0	67.0	10.0	68.6
9	72.0	62.0	10.0	68.2

Interf. Signal: Type D, 190611-00001-022

Channel N	Level dBµV	Limit dBµV	Margin dB	S/N dB
9	72.0	62.0	10.0	69.3

Test: Input Immunity S1 <Eagle DVB-T Receiver >

Test Mode: DVB-T - Picture
Channel: 55 (746.00 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: Type A, 190611-00001-023

Channel N	Level dBµV	Limit dBµV	Margin dB
-5	90.0	80.0	10.0
-1	87.0	77.0	10.0
1	87.0	77.0	10.0
5	90.0	80.0	10.0

Interf. Signal: Type B, 190611-00001-024

Channel N	Level dBµV	Limit dBµV	Margin dB
-5	78.0	68.0	10.0
-1	75.0	65.0	10.0
1	75.0	65.0	10.0
5	78.0	68.0	10.0

Interf. Signal: Type C, 190611-00001-025

Channel N	Level dBµV	Limit dBµV	Margin dB
-5	77.0	67.0	10.0
-1	74.0	64.0	10.0
1	74.0	64.0	10.0
5	77.0	67.0	10.0
9	72.0	62.0	10.0

Interf. Signal: Type D, 190611-00001-026

Channel N	Level dBµV	Limit dBµV	Margin dB
9	72.0	62.0	10.0

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12. IMMUNITY AGAINST RFI VOLTAGES/CURRENT(S2) TEST

12.1General conditions during testing

For equipment for which the wanted signals are not explicitly described in the EN 55020, the nominal signals as specified by the manufacturer shall be applied during the tests, in case a sound signal other than 1 kHz is used as a wanted signal, an appropriate band pass filter shall be used, instead of the filer specified, The input signal applied during the test shall be included in the technical report. The signal level refers in all other cases to the r.m.s. value of the carrier at the peak of the modulation.

12.1.1 Immunity Against RFI Voltage

The immunity against unwanted signal voltages present at the audio and mains input terminals and audio output terminal. Propagation by capacitive coupling (mains, loudspeaker, headphone, audio in/out.).

12.1.2 Immunity Against RFI Current

The immunity from unwanted signal (common mode) currents present in cables connected to the equipment. Propagation by inductive coupling (antenna/tuner input).

12.2 Test Standard

EN 55020: 2007

12.3 Limits

12.3.1 Limits of immunity of RF voltages of mains, loudspeaker and headphone terminals (S2a)

Frequency MHz	Level dB(μV)(e.m.f.)
0.15 to 30 30 to 100 100 to 150	130 120 120-110a
[a] Decreasing linearly with the logarithm of frequency	

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12.3.2 Limits of immunity to RF voltages of audio input and output terminals (except loudspeaker and headphone terminals)(S2a)

Frequency MHz	Level dB(μV)(e.m.f.)
0.15 to 1.6 1.6 to 20 20 to 100 100 to 150	80-90 [a] 90-120 [a] 120 120-110 [b]
[a] Increasing linearly with the logarithm of frequency [b] Decreasing linearly with the logarithm of frequency	

12.3.3 Limits of immunity to RF currents of antenna terminals (S2b)

Frequency MHz	Level dB(μV)(e.m.f.)
26 to 30	126
NOTE 1 For system L the test level in the frequency range 28 MHz to 30MHz is 116 dB(μV)(e.m.f) NOTE 2 According to the measuring procedure the immunity from conducted currents is expressed by the e.m.f. level of the unwanted signal generator.	

12.4 Test Result

PASS.

Please refer to the following page.

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Test: Immunity Conducted Voltages S2a <Eagle DVB-T Receiver >

Test Mode:	DVB-T - Sound	Monitor:	Audio Out
Channel:	9 (205.50 MHz)	S/N:	82.1 dB
Country:	Germany (IF 36.00 MHz)	AF Level:	413 mV

Interf. Signal: Audio Out, 190611-00003-001, 9/28/2011, 11:12:00AM

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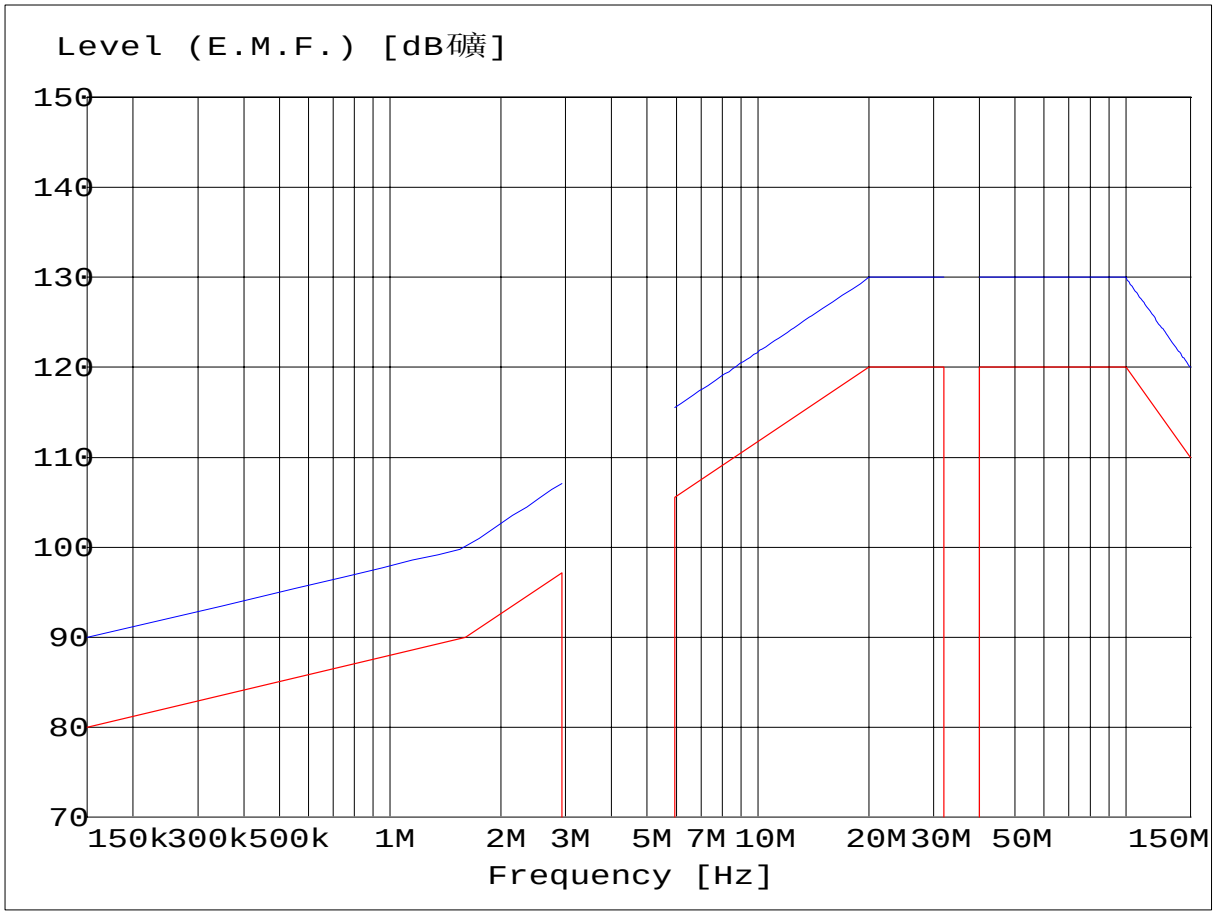
Test: Immunity Conducted Voltages S2a <Eagle DVB-T Receiver >

Test Mode: DVB-T - Picture
Channel: 9 (205.50 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: Audio Out, 190611-00003-002, 9/28/2011, 11:14:21AM



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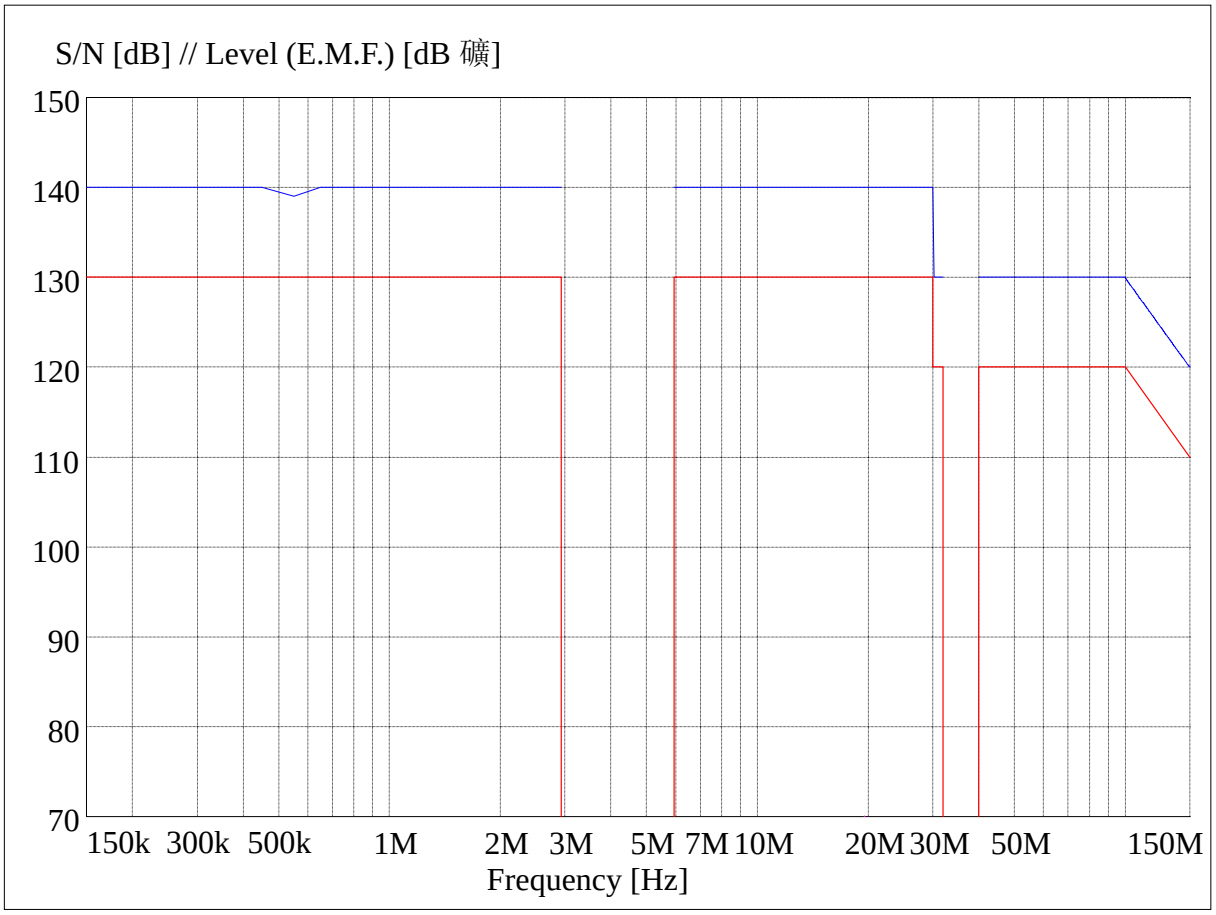
Test: Immunity Conducted Voltages S2a <Eagle DVB-T Receiver >

Test Mode:	DVB-T - Sound	Monitor:	Audio Out
Channel:	9 (205.50 MHz)	S/N:	82.5 dB
Country:	Germany (IF 36.00 MHz)	AF Level:	414 mV

Interf. Signal: Mains, 190611-00002-001, 9/28/2011, 10:53:50AM



Measurement Result, 190611-00002-001-1

Frequency MHz	Level dBµV	Limit dBµV	Margin dB	Status	S/N dB
0.550000	139.0	130.0	9.0		72.7

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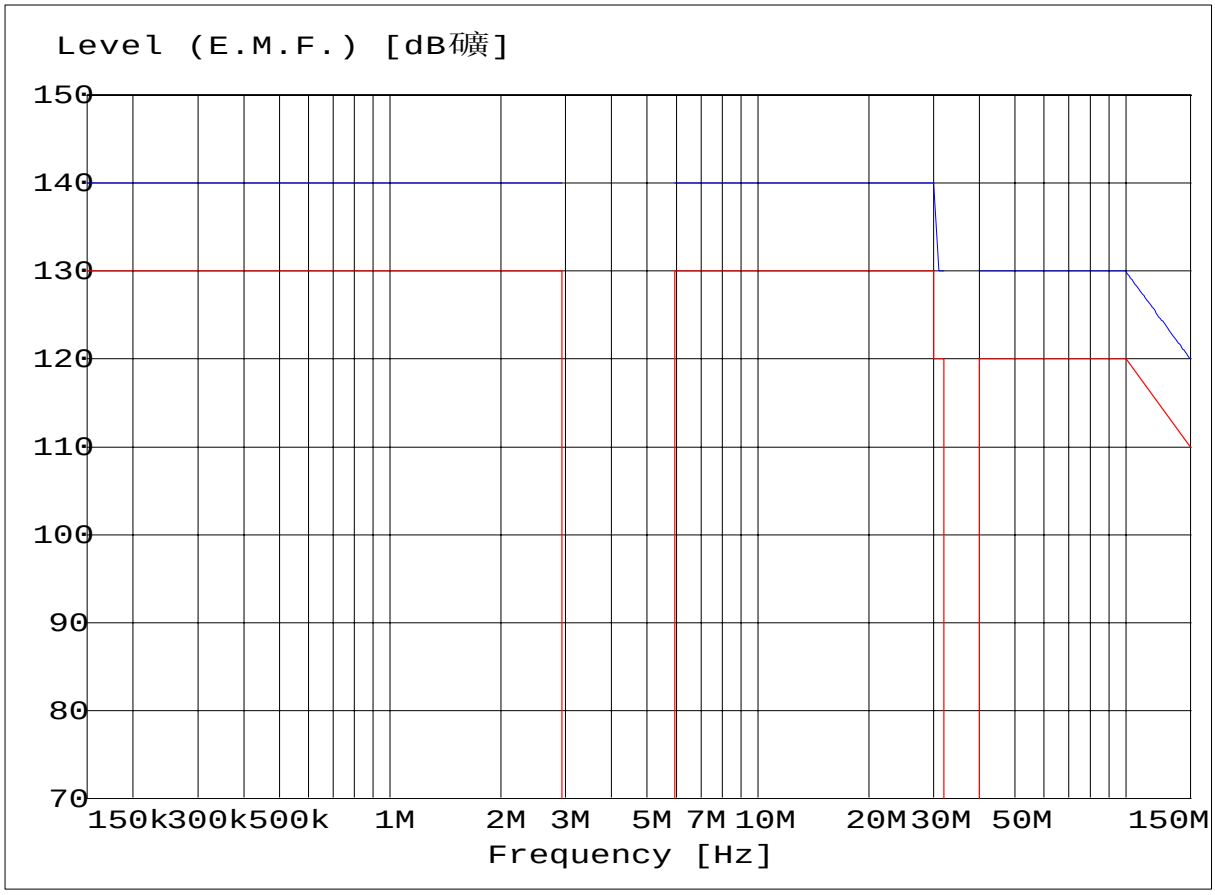
Test: Immunity Conducted Voltages S2a <Eagle DVB-T Receiver >

Test Mode: DVB-T - Picture
Channel: 9 (205.50 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: Mains, 190611-00002-002, 9/28/2011, 10:54:56AM



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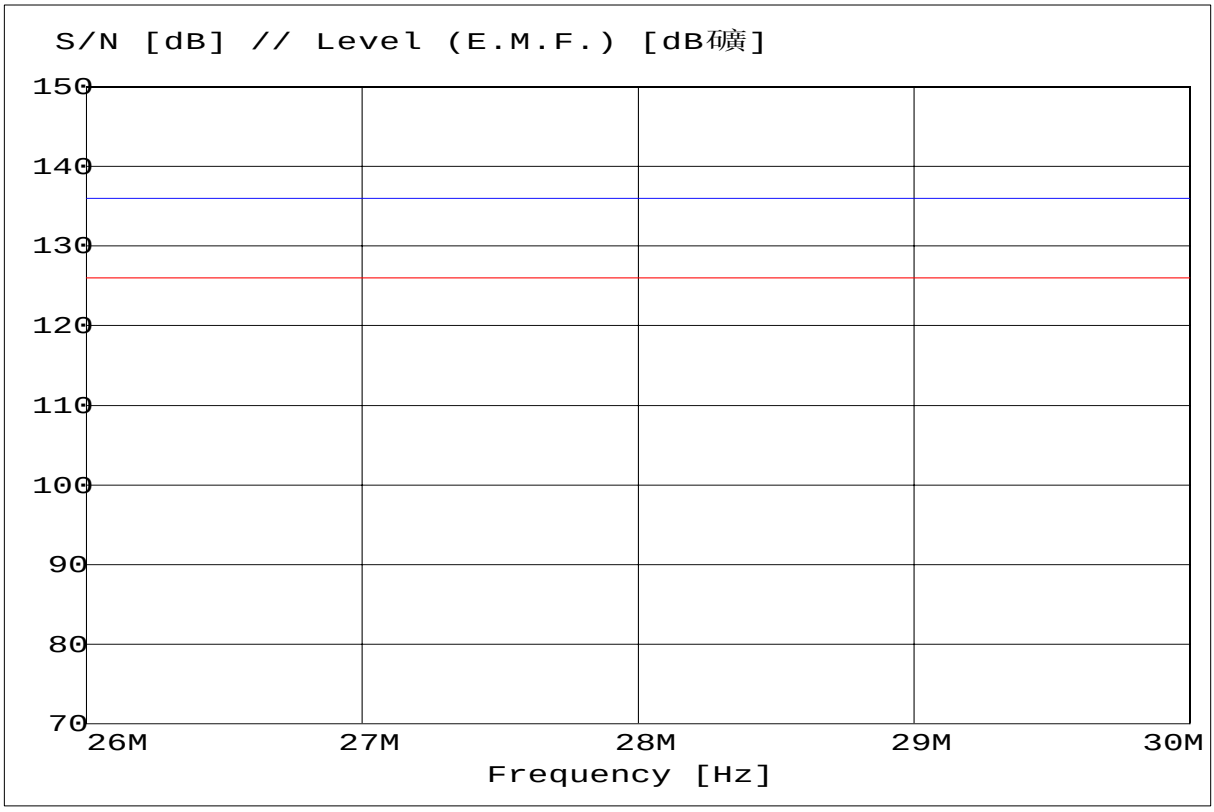
Test: Immunity Conducted Currents S2b <Eagle DVB-T Receiver >

Test Mode:	DVB-T - Sound	Monitor:	Audio Out
Channel:	9 (205.50 MHz)	S/N:	81.0 dB
Country:	Germany (IF 36.00 MHz)	AF Level:	382 mV

Interf. Signal: Antenna, 190611-00004-001, 9/28/2011, 11:28:06AM



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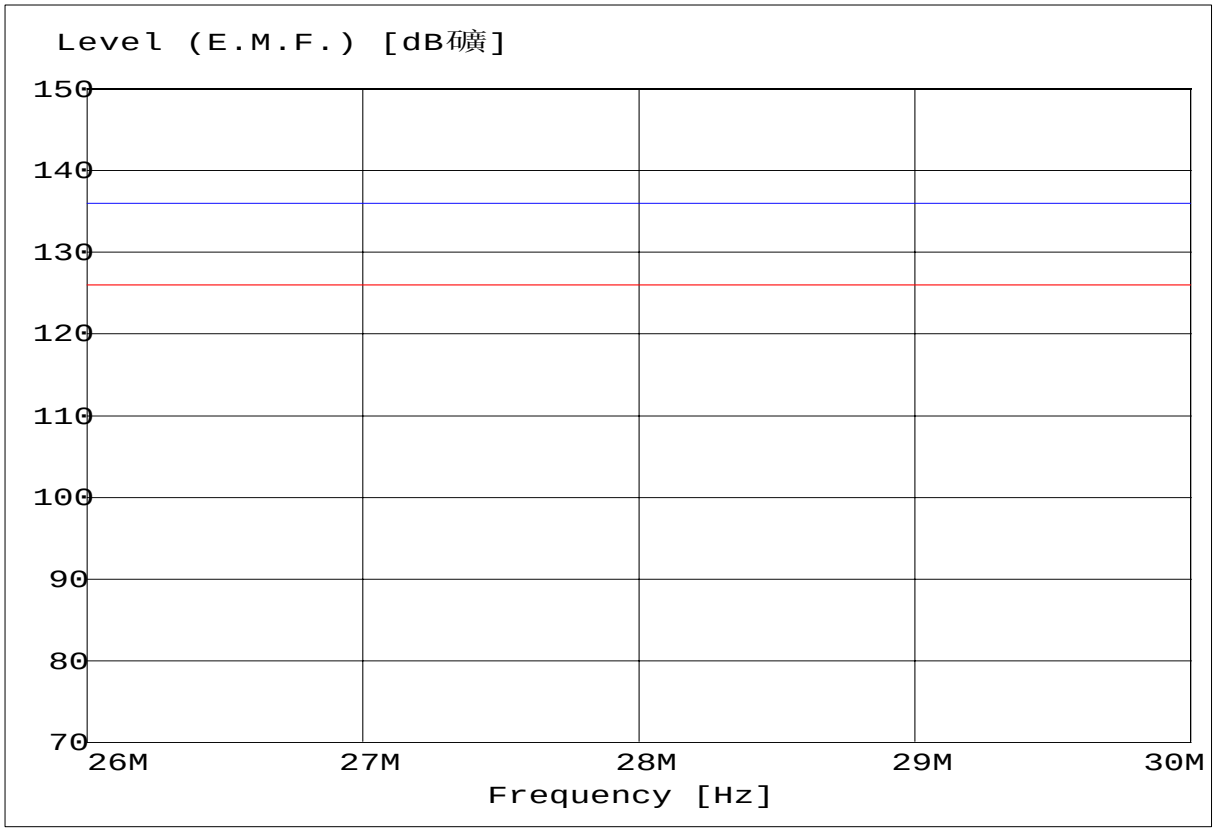
Test: Immunity Conducted Currents S2b <Eagle DVB-T Receiver >

Test Mode: DVB-T - Picture
Channel: 9 (205.50 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: Antenna, 190611-00004-002, 9/28/2011, 11:28:44AM



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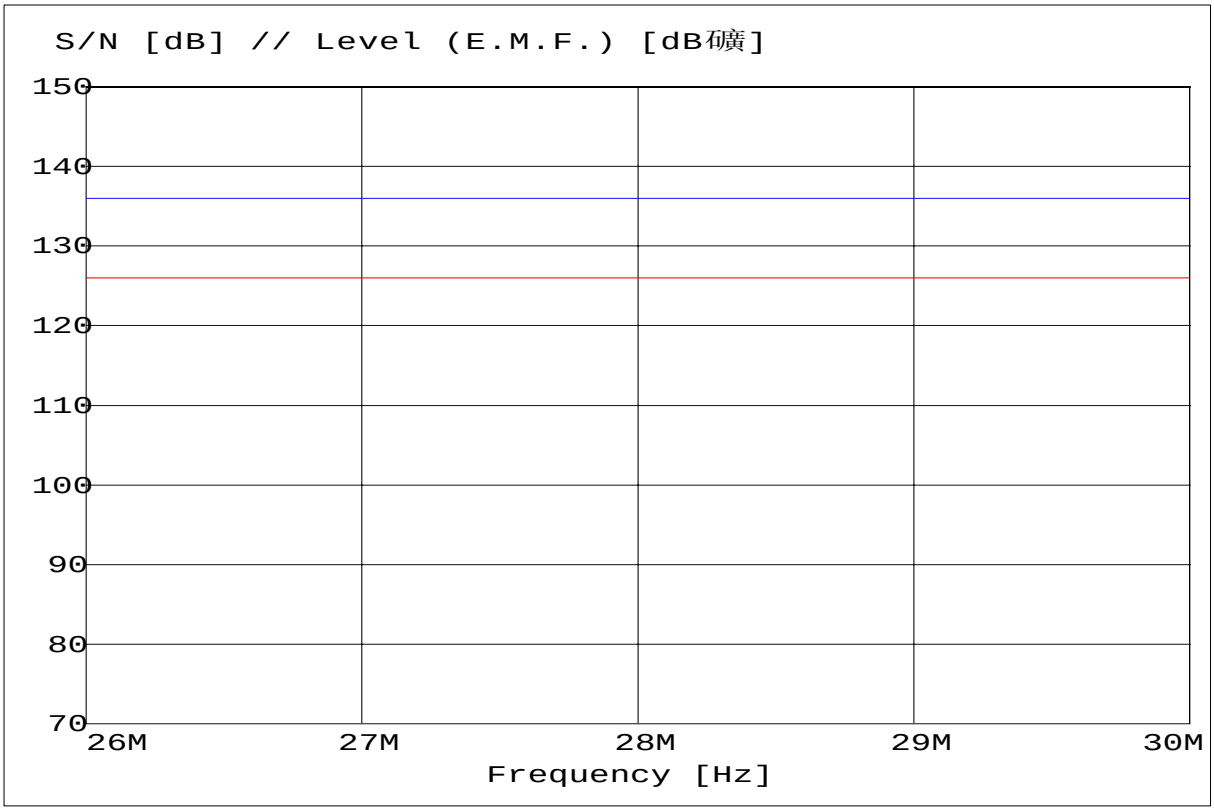
Test: Immunity Conducted Currents S2b <Eagle DVB-T Receiver >

Test Mode:	DVB-T - Sound	Monitor:	Audio Out
Channel:	25 (506.00 MHz)	S/N:	81.1 dB
Country:	Germany (IF 36.00 MHz)	AF Level:	382 mV

Interf. Signal: Antenna, 190611-00004-003, 9/28/2011, 11:31:29AM



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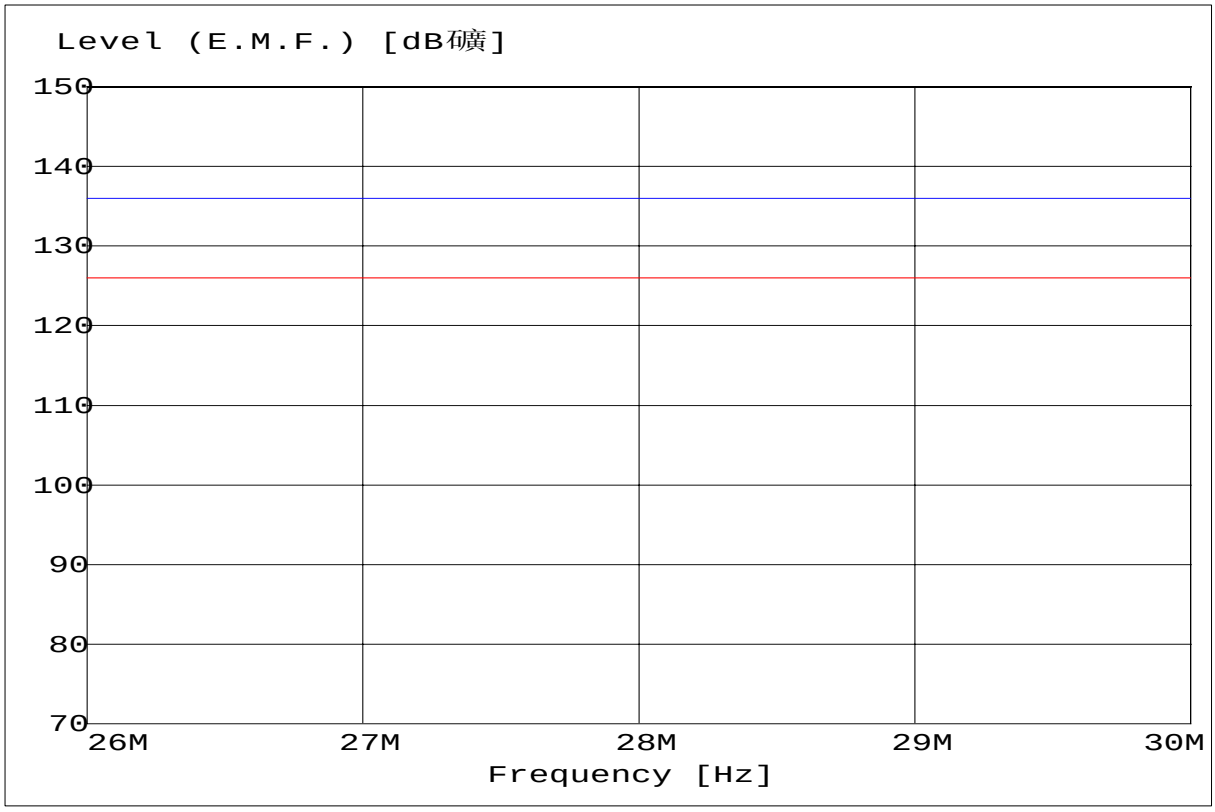
Test: Immunity Conducted Currents S2b <Eagle DVB-T Receiver >

Test Mode: DVB-T - Picture
Channel: 25 (506.00 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: Antenna, 190611-00004-004, 9/28/2011, 11:31:49AM



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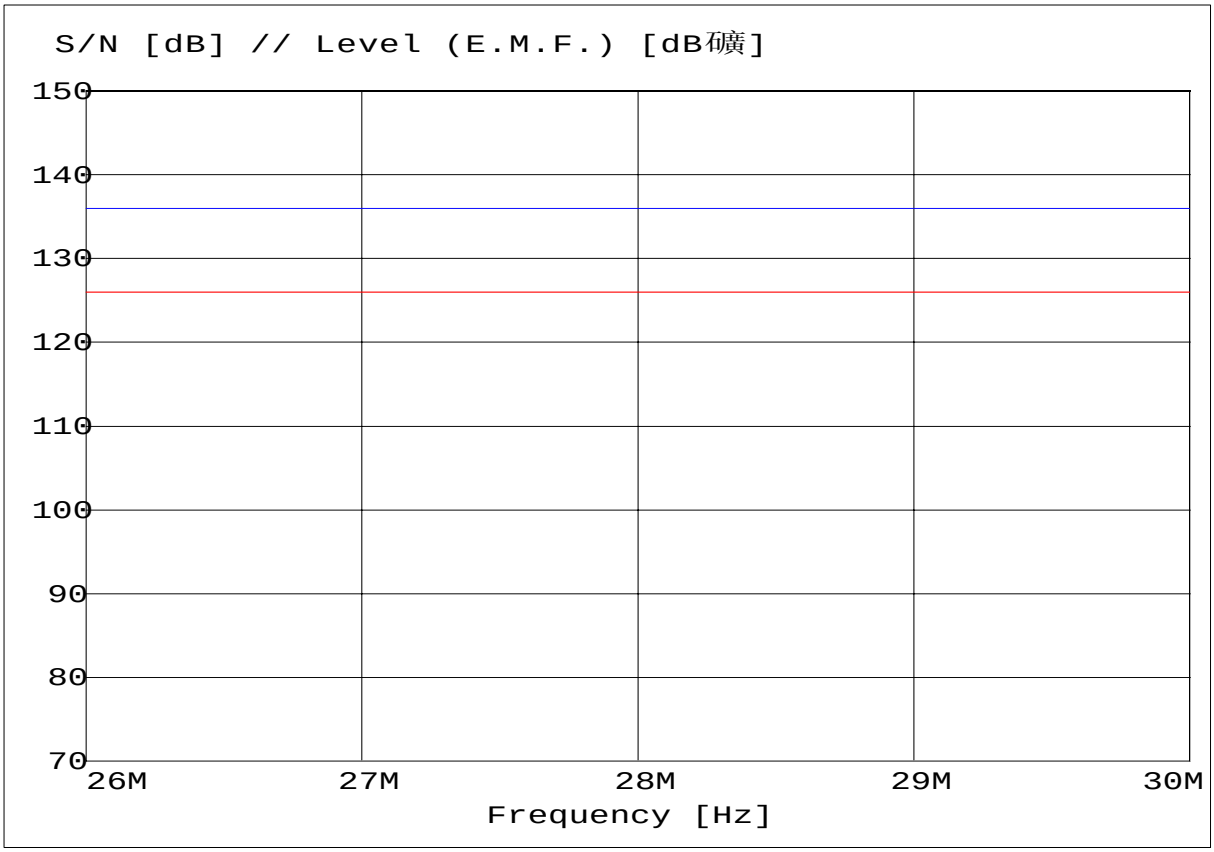
Test: Immunity Conducted Currents S2b <Eagle DVB-T Receiver >

Test Mode:	DVB-T - Sound	Monitor:	Audio Out
Channel:	55 (746.00 MHz)	S/N:	81.1 dB
Country:	Germany (IF 36.00 MHz)	AF Level:	382 mV

Interf. Signal: Antenna, 190611-00004-005, 9/28/2011, 11:34:38AM



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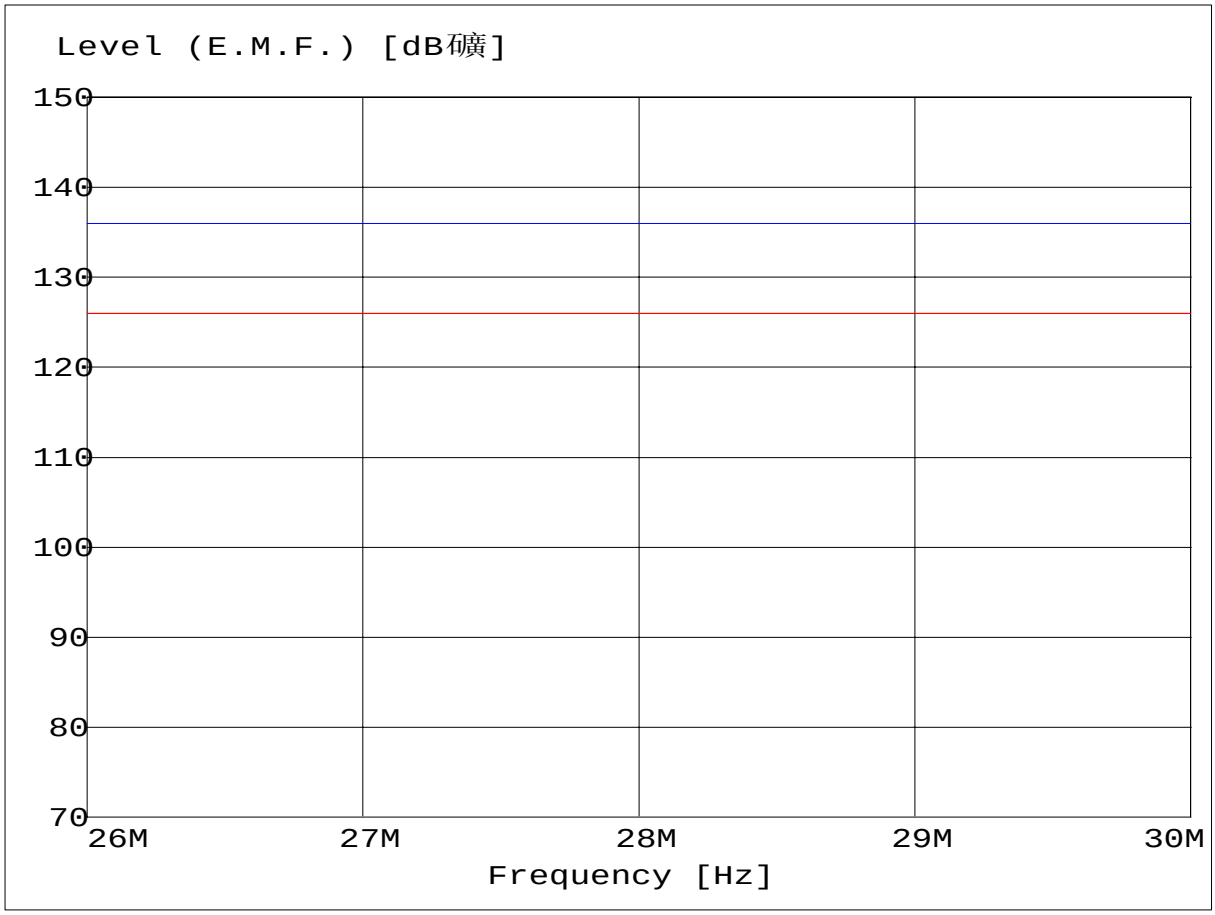
Test: Immunity Conducted Currents S2b <Eagle DVB-T Receiver >

Test Mode: DVB-T - Picture
Channel: 55 (746.00 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: Antenna, 190611-00004-006, 9/28/2011, 11:59:39AM



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13. AMBIENT ELECTROMAGNETIC FIELDS IMMUNITY (S3) TEST

13.1 Test Standard

EN 55020: 2007

13.2 Limits

Receivers and multifunction equipment operating in the monitor mode shall also meet the requirement of 125dB (μV/m) in the frequency range 150 kHz to 150MHz . For the frequency range fc±1.5MHz the limit of 101dB(μV/m) applies.

Frequency MHz	Level dB(μV/m)
0.15 to 47	125
Except frequency bands:	
(f_c-1.5) to (f_c+1.5)	101
(f_s-0.5) to (f_s+0.5)	101
(f_i-2) to (f_v+2)[a]	101
(f_v-2) to (f_i+2)[b]	101
For non-European countries and Russia	
47 to 87	109[d]
Except the tuned channel ±0.5	
For European countries	
47 to 87	109
87 to 108	125
108 to 144	109
144 to 150	125
Except the tuned channel ±0.5	
NOTE f_i is the sound intermediate frequency f_v is the vision intermediate frequency f_s is the intercarrier sound frequency f_c is the color subcarrier frequency	
a For systems B,D, G, K, I ,L,M. b Only for system L. c The frequency 47 MHz cab be varied on a national basis depending on the use of this frequency range. D For television receivers with reception function in frequency range. For television receivers without reception function in this frequency range a level of 125 dB(μV/m) shall apply.	

For equipment with audio or video functions other than related to broadcast reception, for instance infrared headphones, For infrared headphones the frequency band $f_{mod} \pm f_{diff}$ is exempted.

Limits of Immunity to ambient electromagnetic fields of equipment with audio or video functions (S3)

Frequency MHz	Level
0.15 to 150	125

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13.3 Test Result

PASS.

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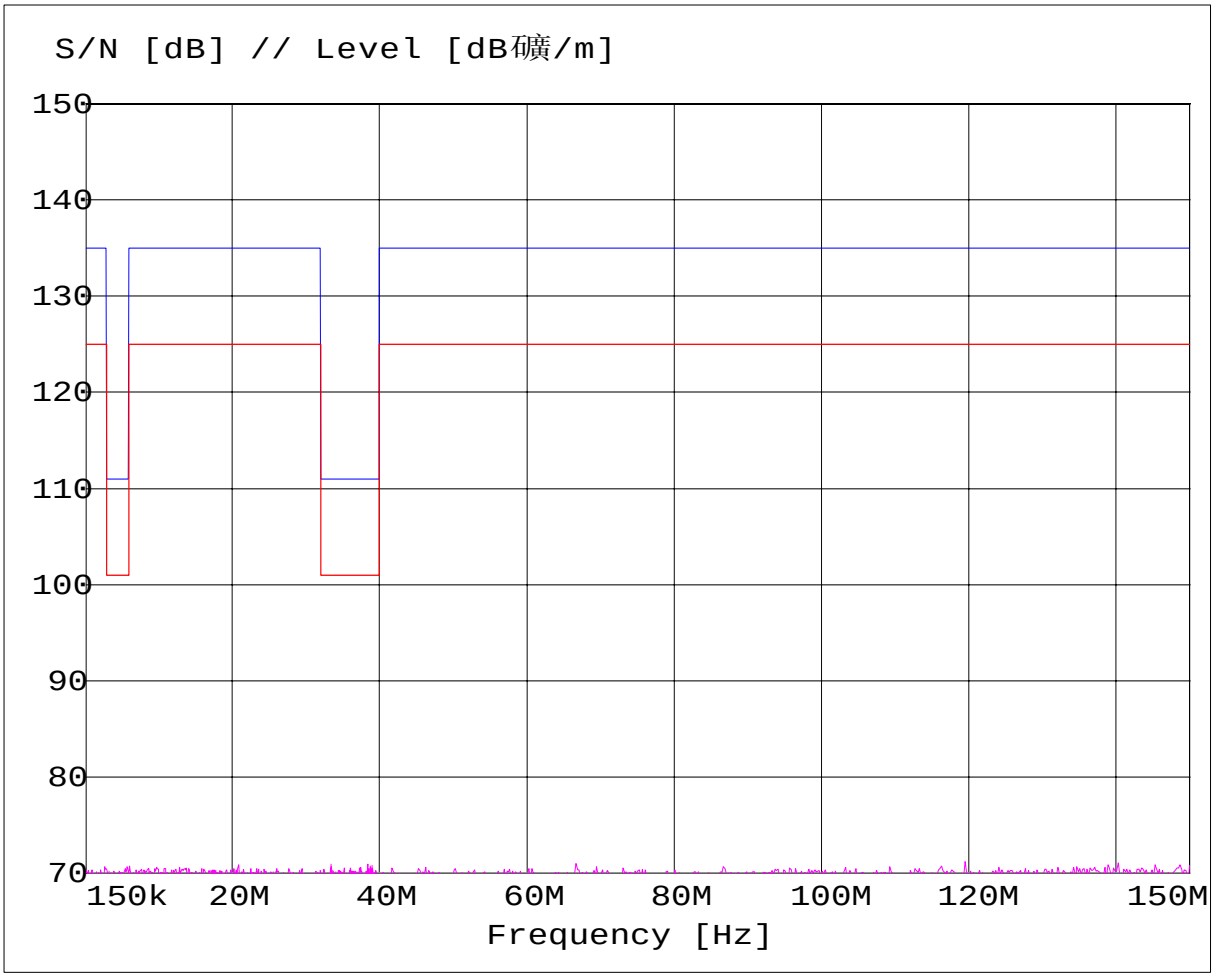
Test: Immunity Radiated Fields S3 <Eagle DVB-T Receiver >

Test Mode:	DVB-T - Sound	Monitor:	Audio Out
Channel:	9 (205.50 MHz)	S/N:	80.1 dB
Country:	Germany (IF 36.00 MHz)	AF Level:	414 mV

Interf. Signal: Scan, 190611-00009-001, 9/28/2011, 2:09:07PM K2 = 1.6 dB



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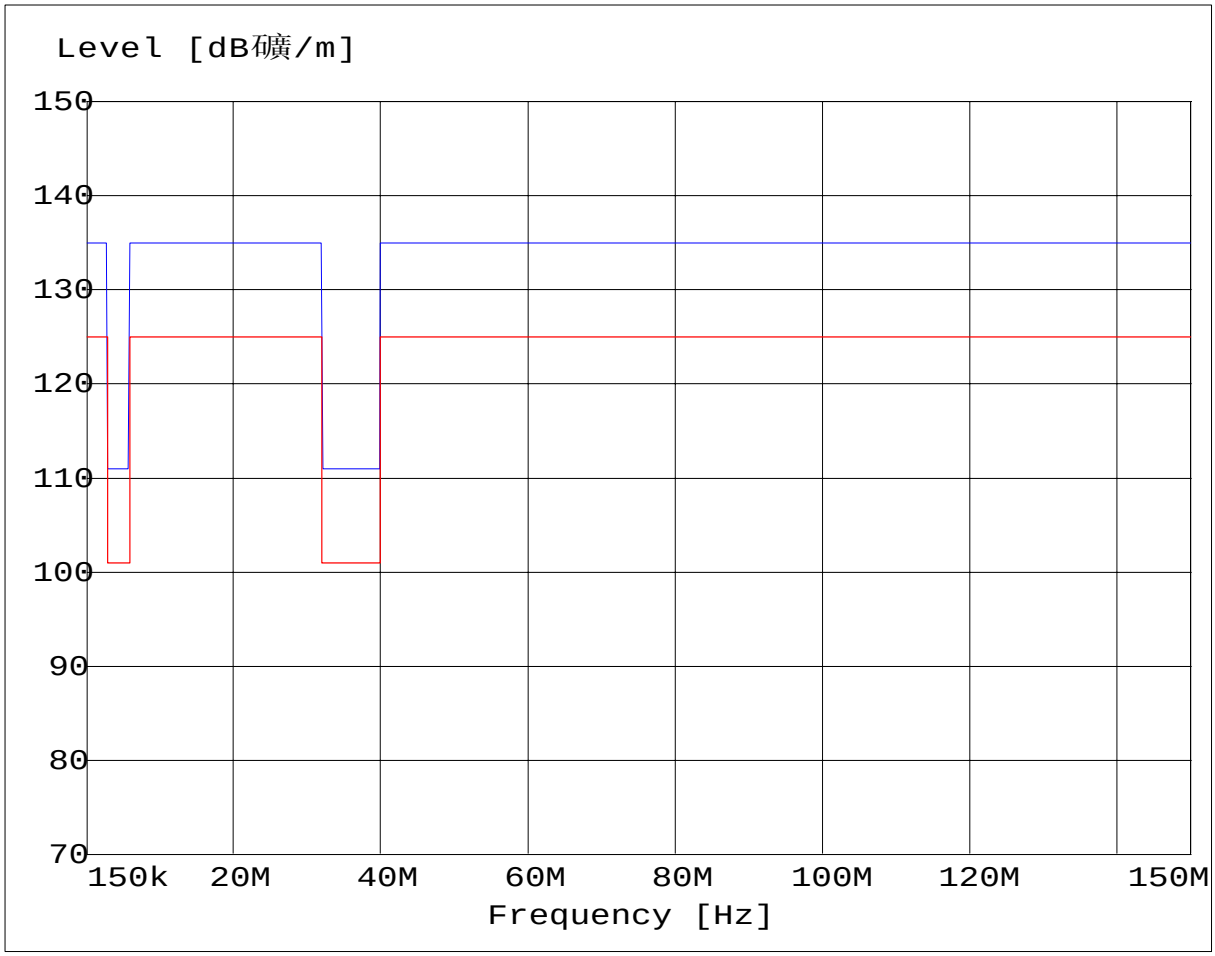
Test: Immunity Radiated Fields S3 <Eagle DVB-T Receiver >

Test Mode: DVB-T - Picture
Channel: 9 (205.50 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: Scan, 190611-00009-002, 9/28/2011, 2:11:32PM K2 = 1.6 dB



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14. SCREENING EFFECTIVENESS TEST

14.1 Test Standard

EN 55020: 2007

14.2 Limits

Limit=50dB
1MHz from the vision carrier and indide the desired channel, for Ch3=56.25MHz

14.3 Test Result

PASS.

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15. KEYED CARRIER TEST

15.1 Test Standard

EN 55020: 2007

15.2 Test Procedure

As an alternative method, a non-homogeneous filed strength ≧3V/m of similar characteristics as the test specification(e.g. generated by a dummy GSM portable telephone) may be applied in a shielded room.

The dummy shall be placed on non-metallic wit a height of 80cm, at a distance of 1m to the EUT. The front side of the EUT shall be placed in parallel to the antenna line of sight, The position shall be described in the measurement report.

15.3 Test Result

PASS.

Please refer to the following pages

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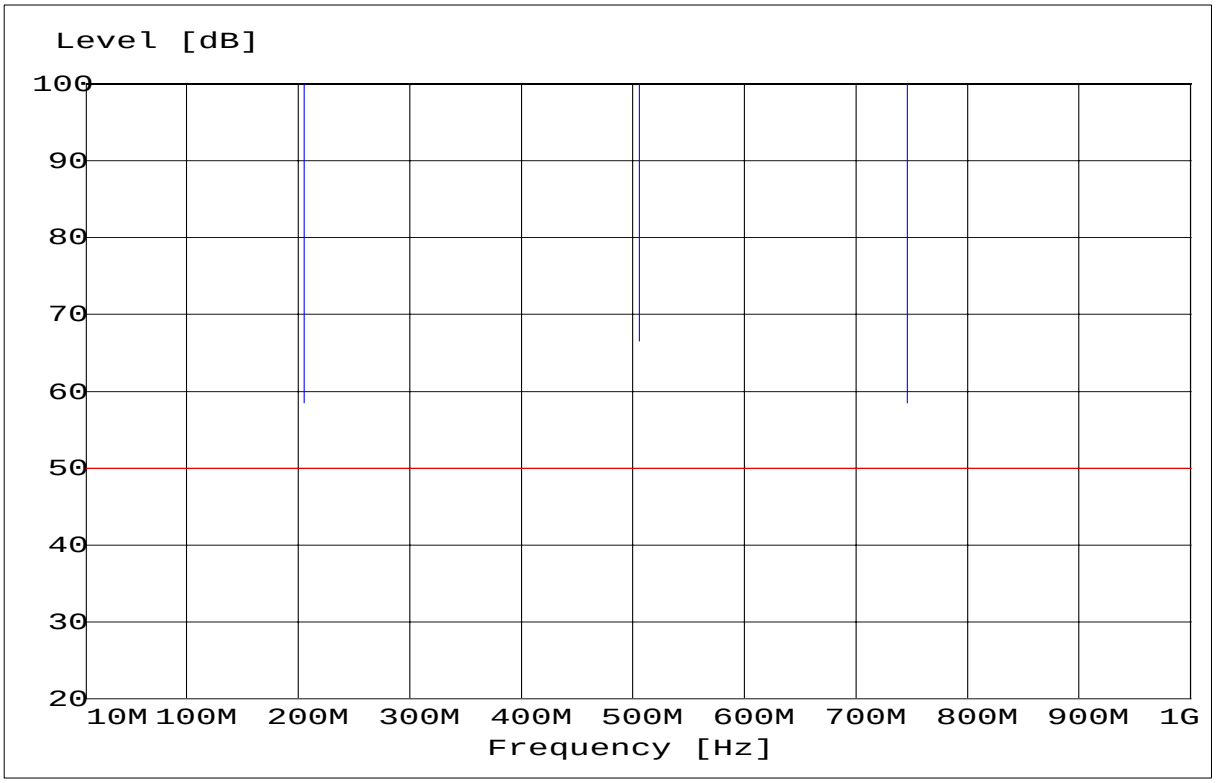
Test: Screening Effectiveness S4 <Eagle DVB-T Receiver >

Test Mode: DVB-T
Channel: 9 (205.50 MHz)
Country: Germany (IF 36.00 MHz)

Interf. Signal: -, 190611-00008-001, 9/28/2011, 1:37:36PM



Measurement Result, 190611-00008-001-1

Frequency MHz	Level dB	Limit dB	Margin dB	Status	Position cm
205.500000	58.5	50.0	8.5		97.3
746.000000	58.5	50.0	8.5		20.1

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16. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Fig.1

Fig.2

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Fig3

Fig.4

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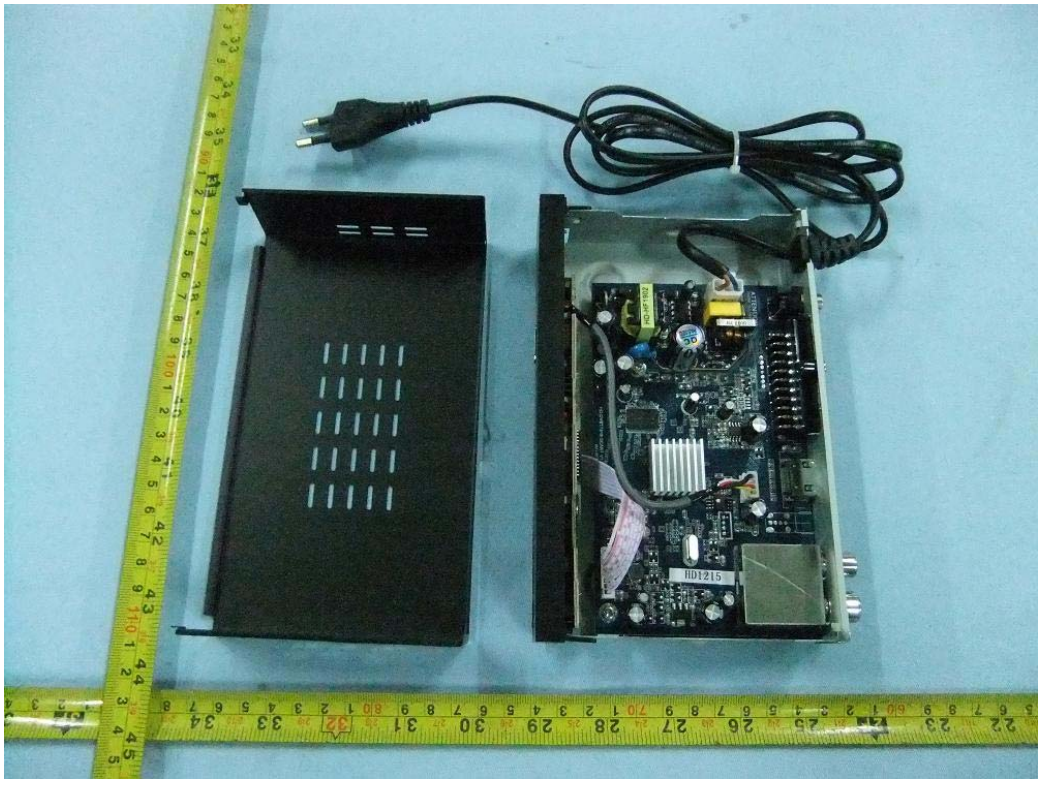

Fig.5

Fig.6

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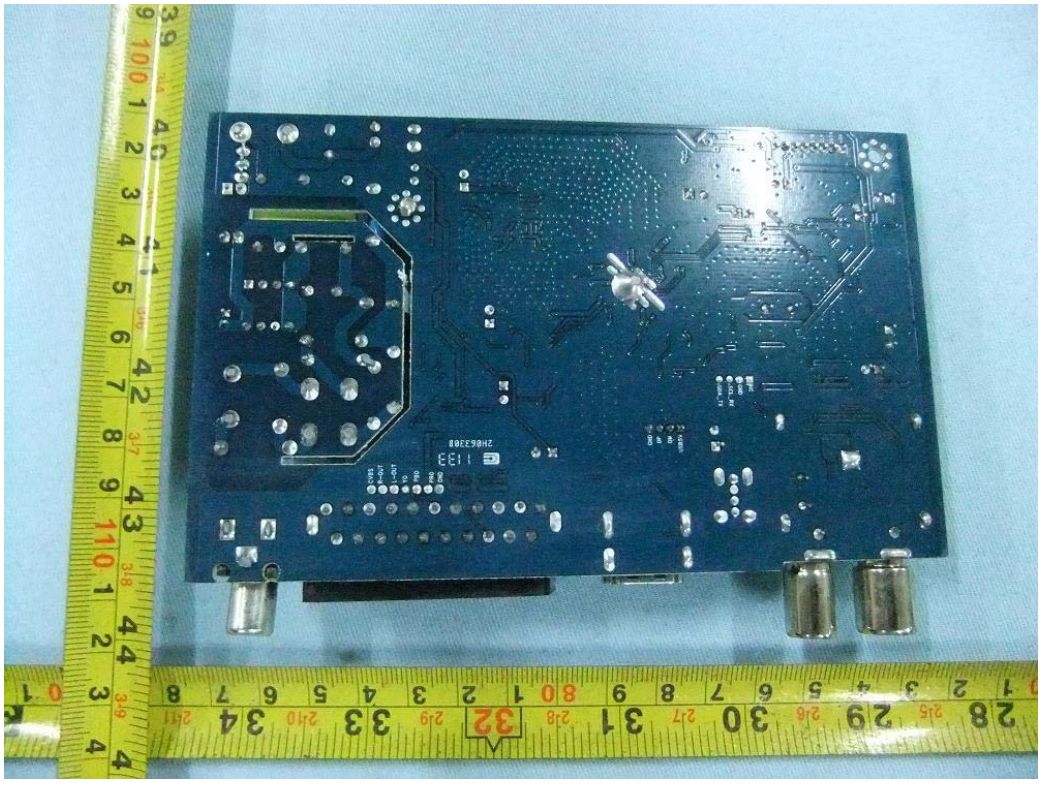

Fig.7

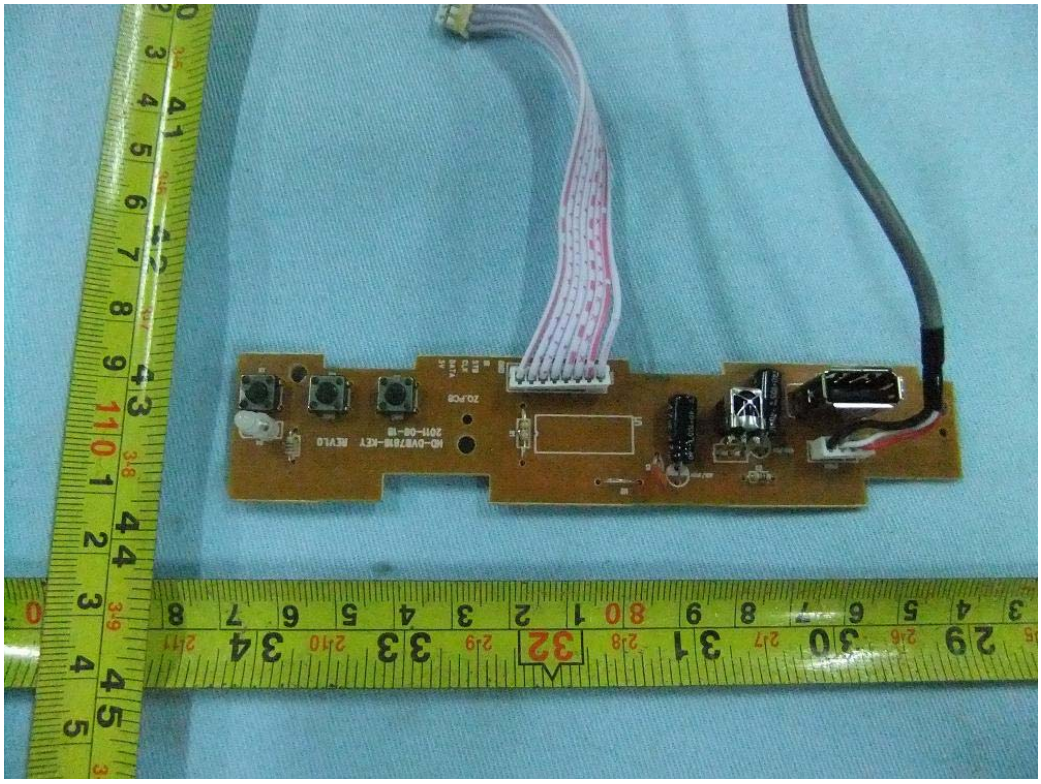

Fig.8

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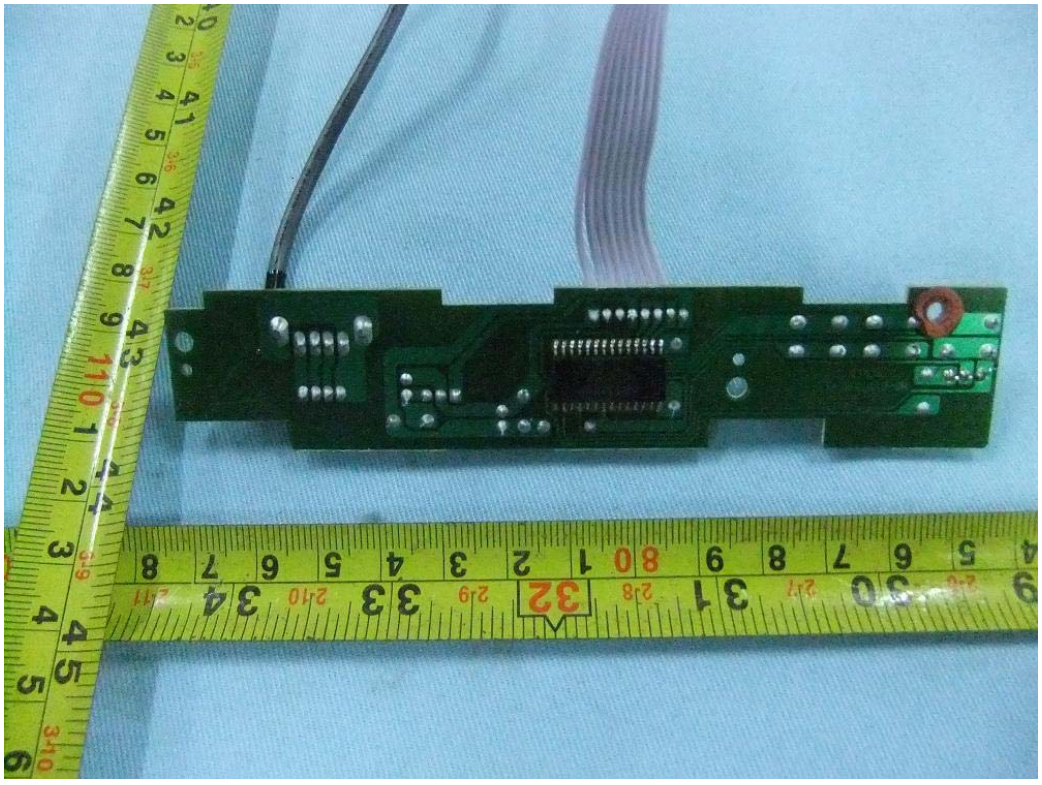

Fig.9

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17. MANUFACTURER/ APPROVAL HOLDER DECLARATION

The following identical model(S):

DVBT04	DVBT06	HD-1701	HD-1702	HD-Mini02
HD-2202	HD-2206	HD-2801	HDT-300	HD DVB-T 1481

Belong to the tested device:

Product description : DVB-T RECEIVER
Model name : DVBT02

No additional models were tested.

----------THE END OF REPORT----------

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